

EXHIBIT A

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Attorneys for Defendant
APPLE INC.

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

ZEROCLICK, LLC, a Texas limited liability
company,

Plaintiff,

v.

APPLE INC., a California corporation,

Defendant.

Case No. 3:15-cv-04417

**APPLE INC.'S AMENDED
INVALIDITY CONTENTIONS
PURSUANT TO PATENT L.R. 3-3
AND 3-4**

JURY TRIAL DEMANDED

1 In accordance with Patent L.R. 3-3, Apple Inc. (“Apple” or “Defendant”) hereby submits
2 its Amended Invalidity Contentions with respect to U.S. Patent No. 8,549,443 (the “’443 patent”)
3 and U.S. Patent No. 7,818,691 (the “’691 patent”) (collectively, “patents-in-suit”).

4 On January 27, 2016, Plaintiff Zeroclick, LLC (“Zeroclick”) served its Disclosure of
5 Asserted Claims and Infringement Contentions. On March 14, 2016, Apple served its Invalidity
6 Contentions.

7 On June 25, 2019, the Court issued its Claim Construction Order (“Claim Construction
8 Order”). (ECF No. 77.) The Claim Construction Order construed the terms “without requiring
9 an exertion of pressure on the screen” in the ’443 patent, and “Pointer (0)” and “‘click’ event” in
10 the ’691 patent. The Claim Construction Order construed “Pointer (0)” as “the arrow, cursor or
11 other bitmap indicating the pointer on the computer screen representing the location of the mouse
12 position or pointer device position in relation to the computer screen.” (*Id.* at 9.) The Claim
13 Construction Order held that “Pointer (0)” must be visible, stating that, “Apple also argues
14 persuasively that dependent claim 45 is invalid for lack of written description, given that the
15 patent does not explain how an invisible pointer could ‘indicate’ its location ‘on the screen’
16 when the pointer would not be visible to the human eye,” (*id.* at 11), and “[t]he ’691 patent fails
17 to meet this requirement [of 35 U.S.C. § 112] as it pertains to an ‘invisible’ pointer because it
18 does not explain how an invisible pointer can ‘indicate’ something,” (*id.* at 11–12).

19 On September 3, 2019, Zeroclick served its Amended Disclosure of Asserted Claims and
20 Infringement Contentions (“Amended Infringement Contentions”). In those Amended
21 Infringement Contentions, Zeroclick asserted infringement of claims 19 and 20 of the ’443 patent
22 (“Asserted Claims of the ’443 patent”) and claims 2-6, 12-16, 24, 26, 28-31, 35, 36, 42, 44, 45,
23 47-49, 52-56, 62-66, 74, 76, 78, 79, 81, 85, 86, 92, 94, 95, and 98-100 of the ’691 patent
24 (“Asserted Claims of the ’691 patent”). Zeroclick also asserted in its Amended Infringement
25 Contentions that “the ‘pointer’ can be a visible bitmap representing a button or slider” or a
26 “depiction of a switch,” which is inconsistent with the Court’s construction of “Pointer (0),” but
27 Apple nonetheless addresses in its invalidity contentions as a protective measure, reserving all
28 rights to seek relief on this issue. Zeroclick also asserted in its Amended Infringement

1 Contentions that “the ‘pointer’ . . . can also be a bitmap corresponding to an area of the screen
 2 that the user touches, which is invisible to the end user looking at the screen, but visible to the
 3 program,” which is inconsistent with the Court’s construction of “Pointer (0)” and the Court’s
 4 holding that the ’691 patent lacks a written description of an invisible pointer, but Apple
 5 nonetheless addresses in its invalidity contentions as a protective measure, reserving all rights to
 6 seek relief on this issue.

7 Each of the Asserted Claims is invalid because it does not claim patent-eligible subject
 8 matter under 35 U.S.C. § 101, because it is anticipated and/or rendered obvious under 35 U.S.C.
 9 §§ 102 and 103, because it fails to satisfy the written description and/or enablement requirements
 10 under 35 U.S.C. § 112 ¶ 1, because it is indefinite under 35 U.S.C. § 112 ¶ 2, because it fails to
 11 specify a further limitation of the subject matter claimed under 35 U.S.C. § 112, ¶ 4, and/or
 12 because it is an insufficiently supported means-plus-function claim under 35 U.S.C. § 112 ¶ 6.¹

13 These Amended Invalidity Contentions reflect Apple’s knowledge, thinking, and
 14 contentions as of the date of service. The disclosures are based upon knowledge, information,
 15 and/or belief presently available to Apple. Discovery is ongoing. Apple has received limited
 16 documents from Zeroclick and no third-party discovery. Expert discovery has not yet begun.
 17 Apple’s reliance on and/or response to Zeroclick’s contentions and assertions regarding the
 18 Court’s Claim Construction Order does not mean that Apple in any way agrees with Zeroclick’s
 19 contentions or the constructions they may assert or imply. Rather, Apple has attempted to
 20 disclose the invalidating prior art and other grounds for invalidity of which it is currently aware
 21 based on its understanding of the scope of Zeroclick’s contentions and the Court’s Claim
 22 Construction Order. Nothing herein should be presumed to represent Apple’s position regarding
 23 the construction of any claim terms. Apple’s positions in these invalidity contentions may be in
 24 the alternative and do not constitute any concession by Apple for purposes of infringement. *See,*
 25 *e.g., Vanmoor v. Wal-Mart Stores, Inc.*, 201 F.3d 1363, 1366 (Fed. Cir. 2000).

26
 27
 28 ¹ Because the patents-in-suit were filed before March 16, 2013, the pre-America Invents
 Act (“AIA”) versions of 35 U.S.C. §§ 101, 102, 103, and 112 apply.

1 In addition, the identification of prior art disclosures that anticipate and/or render obvious
2 a particular claim element in these contentions is not an admission that the claim element
3 satisfies the requirements of 35 U.S.C. § 112. Where Apple asserts that an asserted claim is
4 invalid under 35 U.S.C. § 112 because of a failure to particularly point out and distinctly claim
5 the invention, failure to provide written description support in the specification, and/or failure to
6 enable one of ordinary skill in the art to make and use the claimed invention, Apple has
7 nonetheless provided prior art disclosures that anticipate or render obvious the Asserted Claim
8 on the assumption that Zeroclick will contend the claim is adequately enabled, supported by an
9 adequate written description, and definite.

10 Apple's Invalidity Contentions address only the specific claims asserted by Zeroclick. If
11 Zeroclick subsequently receives permission from the Court to assert other claims, Apple reserves
12 the right to disclose additional and/or further amended Invalidity Contentions regarding those
13 claims.

14 Apple further reserves the right to modify and supplement, without prejudice, its
15 Amended Invalidity Contentions in the event that additional prior art is identified during the
16 course of discovery and/or in response to any findings as to the priority date(s) of the asserted
17 claims; positions otherwise taken by Zeroclick or its expert witness(es) concerning claim
18 construction, infringement, equivalents, and/or invalidity issues; and/or any amendment by
19 Zeroclick of its Amended Infringement Contentions, in accordance with the Federal Rules of
20 Civil Procedure and other applicable rules and statutes.

21 **I. PRIOR ART**

22 Subject to Apple's reservation of rights, Apple identifies each item of prior art presently
23 known that anticipates and/or renders obvious one or more of the Asserted Claims of the patents-
24 in-suit. The patents/applications, publications, and systems identified are also relevant for their
25 showing of the state of the art and reasons and motivations for making improvements, additions,
26 and combinations.

27 Discovery is ongoing, however, and Apple's prior art investigation and third-party
28 discovery are therefore not yet complete. For example, Apple may issue subpoenas to third

parties believed to have knowledge, documentation, and/or corroborating evidence concerning some of the prior art listed and/or additional prior art. These third parties include without limitation the authors, inventors, or assignees of the references listed in these disclosures. For certain prior art public uses and/or offers for sale, Apple is investigating the identities of individuals who knew about or were involved in the making, first public use, offer for sale, and/or sale of these and certain other systems that may be invalidating prior art. Apple is also investigating the exact date that such systems were first made, first publicly used, offered for sale, and/or sold. Apple reserves the right to present additional items of prior art under 35 U.S.C. § 102(a), (b), (e), and/or (g), and/or § 103 located during the course of discovery or further investigation. In addition, Apple reserves the right to assert invalidity under 35 U.S.C. § 102(c), (d), or (f) to the extent that discovery or further investigation yield information forming the bases for such invalidity.

A. Prior Art Patents/Publications

Apple identifies the patents or published patent applications set forth below as prior art references, each of which anticipates or renders obvious (alone or in combination with other references) one or more of the Asserted Claims of the patents-in-suit under 35 U.S.C. §§ 102(a), (b), (e), (g), and/or 103(a). Prior art patents or patent applications included in these contentions may be related (such as a divisional, continuation, continuation-in-part, parent, or child) to earlier- or later-filed patents or publications, may have counterparts filed in other jurisdictions, or may incorporate (or be incorporated by) other patents or publications by reference. The listed patents or patent applications are intended to be representative of those other patents or publications to the extent they exist. Apple accordingly reserves the right to modify, amend, or supplement these contentions with those related patents or patent applications, as well as other prior art references, upon further investigation.

Table 1 – Prior Art Patents/Publications

Number	Title	Filing date	Issue/ Publication Date
U.S. 5,283,559 ("Kalendra '559")	Automatic Calibration Of A Capacitive Touch Screen Used With A Fixed Element Flat Screen Display Panel	Sep. 21, 1992	Feb. 1, 1994
U.S. 6,160,551 ("Naughton '551")	Graphical User Interface For Displaying And Manipulating Objects	Mar. 20, 1995	Dec. 12, 2000
U.S. 5,463,725 ("Henckel '725")	Data Processing System Graphical User Interface Which Emulates Printed Material	Dec. 31, 1992	Oct. 31, 1995
U.S. 6,466,197 ("Kim '197")	Method And Apparatus For Driving Pointing Device Of Computer System	Jun. 28, 1999	Oct. 15, 2002
U.S. 5,347,295 ("Agulnick '295")	Control Of A Computer Through A Position-Sensed Stylus	Oct. 31, 1990	Sep. 13, 1994
U.S. 5,923,908 ("Schrock '908")	Camera With Touch Sensitive Control	Oct. 30, 1997	Jul. 13, 1999
U.S. 6,424,844 ("Lundqvist '844")	Portable Telephone	Nov. 18, 1999	Jul. 23, 2002
U.S. 5,488,204 ("Mead '204")	Paintbrush Stylus For Capacitive Touch Sensor Pad	Oct. 17, 1994	Jan. 30, 1996
U.S. 6,211,856 ("Choi '856")	Graphical User Interface Touch Screen With An Auto Zoom Feature	Apr. 17, 1998	Apr. 3, 2001
U.S. 6,466,203 ("Van Ee '203")	Hand-Held With Auto-Zoom For Graphical Display Of Web Page	Jul. 19, 2000	Oct. 15, 2002

Number	Title	Filing date	Issue/ Publication Date
U.S. 6,073,036 ("Heikkinen '036")	Mobile Station With Touch Input Having Automatic Symbol Magnification Function	Apr. 28, 1997	Jun. 6, 2000
U.S. 5,745,116 ("Pisutha-Arnond '116")	Intuitive Gesture-Based Graphical User Interface	Sep. 9, 1996	Apr. 28, 1998
U.S. 7,197,718 ("Westerman '718")	Interactive Virtual Area Browser For Selecting And Rescaling Graphical Representations Of Displayed Data	Oct. 18, 1999	Mar. 27, 2007
U.S. 5,263,134 ("Paal '134")	Method And Apparatus For Controlling Computer Displays By Using A Two Dimensional Scroll Palette	Jul. 30, 1992	Nov. 16, 1993
U.S. 5,721,853 ("Smith '853")	Spot Graphic Display Element With Open Locking And Periodic Animation	Apr. 28, 1995	Feb. 24, 1998
U.S. 6,037,937 ("Beaton '937")	Navigation Tool For Graphical User Interface	Dec. 4, 1997	Mar. 14, 2000
U.S. 6,340,979 ("Beaton '979")	Contextual Gesture Interface	Aug. 16, 1999	Jan. 22, 2002
U.S. 6,310,610 ("Beaton '610")	Intelligent Touch Display	Dec. 4, 1997	Oct. 30, 2001
U.S. 5,986,655 ("Chiu '655")	Method And System For Indexing And Controlling The Playback Of Multimedia Documents	Oct. 28, 1997	Nov. 16, 1999
U.S. 7,030,860 ("Hsu '860")	Flexible Transparent Touch Sensing System For Electronic Devices	Oct. 8, 1999	Apr. 18, 2006

Number	Title	Filing date	Issue/ Publication Date
U.S. 5,570,113 ("Zetts '113")	Computer Based Pen System And Method For Automatically Cancelling Unwanted Gestures And Preventing Anomalous Signals As Inputs To Such System	Jun 29, 1994	Oct. 29, 1996
U.S. 5,745,719 ("Falcón '719")	Commands Functions Invoked From Movement Of A Control Input Device	Jan. 19, 1995	Apr. 28, 1998
U.S. 6,859,909 ("Lerner '909")	System And Method For Annotating Web-Based Documents	Mar. 7, 2000	Feb. 22, 2005
WO 99/01859 ("Hayhurts '859")	Mobile Telecommunication Device For Simultaneously Transmitting And Receiving Sound And Image Data	June 29, 1998	Jan. 14, 1999
EP 930770 A2 ("Aoki '770")	Portable Cellular Phone Having The Function Of A Camera	Oct. 29, 1998	Jul. 21, 1999
U.S. 5,463,696 ("Beernink")	Recognition System And Method For User Inputs To A Computer System	July 5, 1994	Oct. 31, 1995
U.S. 6,323,846 ("Westerman")	Method And Apparatus For Integrating Manual Input	Jan. 25, 1999	Nov. 27, 2001
U.S. 5,565,658 ("Gerpheid")	Capacitance-Based Proximity With Interference Rejection Apparatus And Methods	Dec. 7, 1994	Oct. 15, 1996
U.S. 5,305,017 ("Gerpheid")	Methods And Apparatus For Data Input	Jul. 13, 1992	Apr. 19 1994
U.S. 4,733,222 ("Evans '222")	Capacative-Variation-Sensitive Touch Sensing Array System	Apr. 18, 1986	Mar. 22, 1988

Number	Title	Filing date	Issue/ Publication Date
U.S. 4,878,553 ("Yamanami '553")	Position Detecting Apparatus	Sep. 14, 1987	Nov. 7, 1989
U.S. 5,321,381 ("Essig '381")	Base For An Electromechanical Functional Unit	Nov. 25, 1992	Jun. 14, 1994
U.S. 5,543,588 ("Bisset '588")	Touch Pad Driven Handheld Computing Device	Dec. 3, 1993	Aug. 6, 1996
U.S. 5,615,384 ("Allard '384")	Personal Communicator Having Improved Zoom And Pan Functions For Editing Information On Touch Sensitive Display	Aug. 29, 1995	Mar. 25, 1997
U.S. 5,856,822 ("Du '822")	Touch-Pad Digital Computer Pointing-Device	Oct. 27, 1995	Jan. 5, 1999
U.S. 6,433,801 ("Moon '801")	Method And Apparatus For Using A Touch Screen Display On A Portable Intelligent Communications Device	Sep. 26, 1997	Aug. 13, 2002
U.S. 6,580,442 ("Singh '442")	Touch-Based Information Processing Device And Method	Dec. 1, 1999	Jun. 17, 2003
U.S. 6,757,002 ("Oross '002")	Track Pad Pointing Device With Areas Of Specialized Function	Nov. 4, 1999	Jun. 29, 2004
U.S. 2001/0035854 ("Rosenberg '854")	Haptic Feedback For Touchpads And Other Touch Controls	Jan. 19, 2000	Nov. 1, 2001
U.S. 2002/0018051 ("Singh '051")	Apparatus And Method For Moving Objects On A Touchscreen Display	Sep. 15, 1998	Feb. 14, 2002
U.S. 5,600,778 ("Swanson '778")	Graphical Resource Editor For Software Customization	Sep. 8, 1995	Feb. 4, 1997

Number	Title	Filing date	Issue/ Publication Date
U.S. 5,689,667 ("Kurtenbach '667")	Methods And System Of Controlling Menus With Radial And Linear Portions	Jun. 6, 1995	Nov. 18, 1997
U.S. 5,790,115 ("Pleyer '115")	System For Character Entry On A Display Screen	Sep. 19, 1995	Aug. 4, 1998
U.S. 5,805,167 ("van Cruyningen '167")	Popup Menus With Directional Gestures	Oct. 30, 1996	Sep. 8, 1998
U.S. 6,028,271 ("Gillespie '271")	Object Position Detector With Edge Motion Feature And Gesture Recognition	Mar. 24, 1998	Feb. 22, 2000
U.S. 6,057,844 ("Strauss '844")	Drag Operation Gesture Controller	Apr. 28, 1997	May 2, 2000
U.S. 6,094,197 ("Buxton '197")	Graphical Keyboard	May 17, 1995	Jul. 25, 2000
U.S. 6,101,498 ("Scaer '498")	System For Displaying A Computer Managed Network Layout With A First Transient Display Of A User Selected Primary Attribute Of An Object And A Supplementary Transient Display Of Secondary Attributes	Nov. 17, 1997	Aug. 8, 2000
U.S. 6,104,400 ("Halachmi '400")	Large Tree Structure Visualization And Display System	Jul. 28, 1998	Aug. 15, 2000
U.S. 6,239,803 ("Driskell '803")	Method To Achieve Least Effort Selection From An Item List Of Arbitrary Length	Apr. 14, 1999	May 29, 2001
U.S. 6,337,698 ("Keely '698")	Pen-Based Interface For A Notepad Computer	Nov. 20, 1998	Jan. 8, 2002

Number	Title	Filing date	Issue/ Publication Date
U.S. 6,429,846 ("Rosenberg '846")	Haptic Feedback For Touchpads And Other Touch Controls	Jan. 19, 2000	Aug. 6, 2002
U.S. 6,445,383 ("Chambers '383")	System To Detect A Power Management System Resume Event From A Stylus And Touch Screen	Feb. 9, 1998	Sep. 3, 2002
U.S. 6,496,206 ("Mernyk '206")	Displaying Thumbnail Images Of Document Pages In An Electronic Folder	Jun. 29, 1998	Dec. 17, 2002
U.S. 6,618,063 ("Kurtenbach '063")	Method And Apparatus For Producing, Controlling And Displaying Menus	Mar. 8, 1999	Sep. 9, 2003
U.S. 6,707,443 ("Bruneau '443")	Haptic Trackball Device	Feb. 18, 2000	Mar. 16, 2004
U.S. 6,819,345 ("Jones '345")	Managing Position And Size For A Desktop Component	Feb. 17, 1998	Nov. 16, 2004
U.S. 6,915,489 ("Gargi '489")	Image Browsing Using Cursor Positioning	Mar. 28, 2001	Jul. 5, 2005
U.S. 7,003,734 ("Gardner '734")	Method And System For Creating And Displaying Images Including Pop-Up Images On A Visual Display	Nov. 28, 2000	Feb. 21, 2006
U.S. 2002/0087661 ("Matichuk '661")	One Click Web Records	Oct. 4, 2001	Jul. 4, 2002
U.S. 2003/0200505 ("Evans '505")	Method And Apparatus For Overlaying A Source Text On An Output Text	May 14, 2003	Oct. 23, 2003
EP0660218A1 ("Buxton '218")	An Improved Graphical Keyboard	Dec. 20, 1994	Jun. 28, 1995

Number	Title	Filing date	Issue/ Publication Date
U.S. 5,117,071 ("Greanias '071")	Stylus Sensing System	Oct. 31, 1990	May 26, 1992
U.S. 6,009,336 ("Harris '336")	Hand-Held Radiotelephone Having A Detachable Display	July 10, 1996	Dec. 28, 1999
EP0969641 A1 ("Romao '641")	Téléphone Mobile Avec Écran Tactile Et Clavier	May 26, 1999	Jan. 5, 2000
U.S. 5,572,005 ("Hamilton '005")	Telecommunications Booth Comprising A Telecommunications Train Having A Plurality Of Wheeled Housings	Jan. 31, 1995	Nov. 5, 1996
U.S. 5,802,467 ("Salazar '467")	Wireless And Wired Communications, Command, Control And Sensing System For Sound And/Or Data Transmission And Reception	Sep. 28, 1995	Sep. 1, 1998
PCT Application Publication No. WO 97/18547 to Ure et al. ("Ure '547")	Multi-Touch Input Device, Method And System That Minimize The Need For Memorization	Nov. 18, 1996	May 22, 1997

B. Non-Patent Prior Art Publications

Apple identifies the publications below as prior art references, each of which anticipates or renders obvious (alone or in combination with other references) one or more of the Asserted Claims of the patents-in-suit under 35 U.S.C. §§ 102(a), (b), (e), (g), and/or 103(a).

Table 2 – Non-Patent Prior Art Publications

Title	Author	Date of Publication	Publisher
IBM Simon Users Manual	IBM	1994	From BellSouth, Designed by IBM

Title	Author	Date of Publication	Publisher
First Smartphone Turns 20: Fun Facts About Simon	Doug Aamoth	Aug. 18, 2014	Time.com
Smartphone at 20: IBM Simon to iPhone 6	Sophie Curtis	Aug. 16, 2014	Telegraph Media Group Limited
The world's first smartphone, Simon, was created 15 years before the iPhone	Steven Tweedie	June 14, 2015	Business Insider
A New Principle for an X-Y Touch Screen	Bent Stumpe	March 16, 1977	CERN SPS-AOP-BS-jf, pp. i-17. CERN, Geneva (1977)
Touchscreen Toggle Design ("Plaisant May 1992")	Catherine Plaisant, et al.	May 3-7, 1992	<i>In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '92)</i> , Penny Bauersfeld, John Bennett, and Gene Lynch (Eds.). ACM, New York, NY, USA, pp. 667-668
Newton Apple MessagePad Handbook	Apple Computer, Inc.	1995	Apple Computer, Inc.
Newton MessagePad 2000 User's Manual	Apple Computer, Inc.	1997	Apple Computer, Inc.
Investigating Touchscreen Typing: The effect of keyboard size on typing speed ("Sears Oct. 1992")	Andrew Sears, et al.	Oct. 1992	Behaviour & Information Technology, Vol. 12, Issue 1, pp. 17-22
Touchscreen Toggle Switches: Push or Slide? Design issues and usability study ("Plaisant Nov. 1990")	Catherine Plaisant and Daniel Wallace	Nov. 1990	Human-Computer Interaction Laboratory Center for Automation Research Department of Psychology, University of Maryland

Title	Author	Date of Publication	Publisher
A New Era for Touchscreen Applications: High Precision, Dragging Icons, and Refined Feedback (“Plaisant June 1990”)	Andrew Sears, Catherine Plaisant, Ben Shneiderman	June 1990	Advances in Human-Computer Interaction, Vol. 3, R.Hartson, D. Hix, Ed.
The HP 150 Computer	Haas, Mark	November 1984	Byte Magazine Vol. 9 No. 12. pp. 262–275
Product Preview: The HP 150	Phil Lemmons and Barbara Robertson	October 1983	Byte Magazine Vol. 8 No. 19. pp. 36-58
The Human Factors of Touch Input Devices	Alfred T. Lee	Sep. 1997	Beta Research, Inc.
How CERN Broke the Software Barrier	Michael Crowley-Milling	September 29, 1977	New Scientist Magazine Vol. 75, pp. 790-791
The First Capacitive Touch Screens at CERN	Bent Stumpe and Christine Sutton	Mar 31, 2010	CERN Courier, Vol. 50, Issue 3, p.13
The ‘Touch Screen’ Revolution, from Physics to Daily Life: Applications in Informatics, Energy, and Environment	Bent Stumpe	Aug 27, 2014	Wiley-Blackwell
Ericsson R380 User’s Manual	Ericsson Mobile Communications AB	Oct. 2000	Ericsson Mobile Communications AB
Ericsson R380 – The First Smartphone?	Mister Mobility	Jan. 24, 2012	Mobilityarena.com

Title	Author	Date of Publication	Publisher
R380 for GSM 900/1800 Open to Communicate and Organize	Press Release	Mar. 17, 1999	http://www.ericsson.se/pressroom/phli_p.shtml
Mobile Phone R380 Design Guidelines for WAP Services		November 1999	Ericsson Mobile Communications AB
Carroll Touch Product Specification Sheet – Flat Panel Series: Infrared Flat Panel (IRFP) Touch Frames		June 30, 1999	Carroll Touch
Carroll Touch Infrared Flat Panel Touch Frames (website)		Jan. 27, 1999	Carroll Touch
A Gesture Based Text Editor, from People and Computers IV: Proceedings of the Fourth Conference of the British Computer Society.	L.K. Welbourn and R.J. Whitrow	Sep. 1988	Cambridge University Press
Scheduling Home Control Devices: Design Issues and Usability Evaluation of Four Touchscreen Interfaces (“Plaisant Scheduling 1992”)	Catherine Plaisant and Ben Shneiderman	1992	International Journal of Man-Machine Studies, Vol. 36, Issue 3, March 1992, pp. 375–393
An Experiment to Study Touchscreen “Button” Design	Marcy Ann Valk	Oct. 1985	Proceedings of the Human Factors and Ergonomics Society Annual Meeting October 1985 Vol. 29 No. 2 pp. 127-131.

Title	Author	Date of Publication	Publisher
Quikwriting: Continuous Stylus- based Text Entry	Ken Perlin	1998	In <i>Proceedings of the 11th annual ACM symposium on User interface software and technology</i> (UIST '98). ACM, New York, NY, USA, pp. 215-216.
The Music Notepad	Andrew Forsberg, Mark Dieterich, and Robert Zeleznik	1998	In <i>Proceedings of the 11th annual ACM symposium on User interface software and technology</i> (UIST '98). ACM, New York, NY, USA, pp. 203-210.
Some Design Refinements and Principles on the Appearance and Behavior of Marking Menus	Mark A. Tapia and Gordon Kurtenbach	Nov. 14-17, 1995	In <i>Proceedings of the 8th annual ACM symposium on User interface and software technology</i> (UIST '95). ACM, New York, NY, USA, pp. 189-195.
Dasher - A Data Entry Interface Using Continuous Gestures and Language Models	David J. Ward, Alan F. Blackwell, and David J. C. MacKay	2000	In <i>Proceedings of the 13th annual ACM symposium on User interface software and technology</i> (UIST '00). ACM, New York, NY, USA, pp. 129-137.
Dasher (website)	David J. Ward	Aug. 17, 1999	http://wol.ra.phy.cam.ac.uk/djw30/dasher
Touchscreen Technology Improves And Extends Its Options	Richard A. Quinnell	Nov. 9, 1995	EDN: The DesignMagazine of the Electronics Industry
Dasher (animation)	David J. Ward	Aug. 17, 1999	http://wol.ra.phy.cam.ac.uk/djw30/dasher
The Design and Evaluation of Marking Menus	Gordon Paul Kurtenbach	1993	Graduate Department of Computer Science, University of Toronto

Title	Author	Date of Publication	Publisher
The Amazing True Story of How the Microwave Was Invented by Accident	Matt Blitz	Feb. 23, 2016	Popular Mechanics
Star7 PDA Prototype Video	James Gosling Ed Frank	1994	SunMicrosystems Inc.
Touchscreen Toggle Design Video (“Plaisant Video”)	Catherine Plaisant	Jan. 1991	HCL Laboratory University of Maryland College Park, MD
Scheduling Home Control Devices Video (“Plaisant Scheduling Video”)	Catherine Plaisant, Ben Shneiderman	Dec. 1989	HCL Laboratory University of Maryland College Park, MD
The Power of Penpoint	Robert Carr and Dan Shafer	Feb. 1991	Addison-Wesley Publishing Company, Inc.
Getting Started With Your EO Personal Communicator	Ann Cullen	1993	EO Publications
1993 Discover Awards: Computer Hardware & Electronics: The Great Communicator	Celeste Baranski & Alain Rossmann, EO	Oct. 1, 1993	Discover Magazine
FingerWorks Installation and Operation Guide for the TouchStream ST and TouchStream LP		2002	FingerWorks Inc.
Quick Reference Guide for TouchStream ST/LP		1999	FingerWorks Inc.
Quick Reference Guide for iGesture Products		1999	FingerWorks Inc.

Title	Author	Date of Publication	Publisher
Scheduling ON-OFF Home Control Devices: Design Issues and Usability Evaluation of Four Touchscreen Interfaces	Catherine Plaisant and Ben Shneiderman	Nov. 1989	HCL Laboratory University of Maryland College Park, MD
Scheduling Home-Control Devices: A Case Study Of The Transition From The Research Project To A Product	Catherine Plaisant, et al.	June 12, 1995	HCL Laboratory University of Maryland College Park, MD
Java: The Inside Story	Michael O'Connell	July 1995	SunWorld Online
GO Corporation - Introducing PenPoint 1991 (video)		1991	GO Corporation
AT&T EO Personal Communicator Owners's Video		April 1993	EO, Inc.
EO Personal Communicator Video (Computer Chronicles 1993)		1993	Computer Chronicles
XEROX 5700 Combines Laser, Digital Technologies	Lori Valigra	Nov. 1980	Mini-Macro Systems
Computer Fundamentals, from Pathology Informatics, Theory & Practice	Seung Park, et al.	2012	American Society for Clinical Pathology
The World of Messaging, An Introduction to Personal Communications	Randy Stock	1993	EO Publications

Title	Author	Date of Publication	Publisher
AT&T EO Personal Communicator Third Party Product and Services Catalog		Fall 1993	EO, Inc.
AT&T EO 440 Personal Communicator		Jan. 2014	http://www.oldcomputers.net/eo-440.html
EO Personal Communicator	David Tebbutt	Feb. 1 1993	Personal Computer World
EO Personal Communicator, Abstract	David Tebbutt	Feb. 1, 1993	Personal Computer World
DataLink PB: The Kind of Modem Dick Tracy Would Have Loved	Stewart Alsop	June 7, 1993	InfoWorld
Dissertation Proposal: The Design and Evaluation of Gestures for Pen-Based User Interfaces	A. Chris Long, Jr.	May 1997	
Best of What's New Awards 1999: This Year's Greatest Achievements in Science & Technology	William G. Phillips	Dec. 1999	Popular Science
User Learning and Performance with Marking Menus	Gordon Kurtenbach and William Buxton	1994	<i>In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '94)</i> , Beth Adelson, Susan Dumais, and Judith Olson (Eds.). ACM, New York, NY, USA, 258-264.

Title	Author	Date of Publication	Publisher
Hand Tracking, Finger Identification, and Chordic Manipulation on a Multi-Touch Surface	Wayne Westerman	Spring 1999	University of Delaware

C. Prior Art Offered for Sale or Publicly Used or Known

Apple identifies below products and systems (collectively “Product Prior Art”) that were publicly known, in public use, offered for sale, sold, and/or invented in the U.S. (and not abandoned, suppressed, or concealed) prior to the purported effective filing date of the patents-in-suit and/or prior to the alleged invention date of the claimed inventions. This Public Prior Art anticipates or renders obvious (alone or in combination with other references) one or more of the Asserted Claims of the patents-in-suit under 35 U.S.C. §§ 102(a), (b), (e), (g), and/or 103(a). In addition, Apple is currently investigating the dates of conception and reduction to practice of such Public Prior Art and when such Public Prior Art was first known or used by others. In the course of its investigation, Apple may identify additional prior art documents describing these products and systems that may also anticipate and/or render obvious the one or more Asserted Claims of the patents-in-suit as invalidating printed publications.

Table 3 – Product Prior Art

Item Offered for Sale or Publicly Used or Known	Date Offered for Sale or Became Publicly Used or Known	Identity of Person Offering for Sale or Making Use or Making Known
Apple Newton MessagePad (“Apple Newton”)	August 1993	Apple Inc.
IBM Simon Personal Communicator (“IBM Simon”)	August 1994	International Business Machines Corp.
Ericsson R380	December 1999	Ericsson AB
HP-150	November 1983	Hewlett Packard

Item Offered for Sale or Publicly Used or Known	Date Offered for Sale or Became Publicly Used or Known	Identity of Person Offering for Sale or Making Use or Making Known
MicroTouch Touchscreen	1992	MicroTouch Systems, Inc.
NESELCO Capacitive Touch Screen Terminal	1980	NESELCO
Carroll Touch Infrared Flat Panel (IRFP) Touch Frames	1996	Elo Touch Solutions
Plaisant Toggle System	1990	Catherine Plaisant; University of Maryland
CERN Capacitive Touch Screen Terminal	1980	European Organization for Nuclear Research ("CERN")
Star7 System	September 1992	Sun Microsystems; James Gosling; Ed Frank
Plaisant Calendar Scheduling System	1988	Catherine Plaisant; University of Maryland
EO Personal Communicator	1993	EO, Inc. / AT&T Corporation
PenPoint Operating System	1992	Go Corporation
Palm Pilot	1996	Palm Inc.
Palm OS	1996	Palm Inc.
Windows CE	1996	Microsoft Corporation
iPaq	April 2000	Compaq
XEROX 5700 Laser/Digital Printing System	1980	Xerox Corporation

II. ANTICIPATION AND OBVIOUSNESS UNDER 35 U.S.C. §§ 102 AND 103

In accordance with Patent Local Rule 3-3(b), Apple hereby identifies whether each item of prior art anticipates and/or renders obvious the Asserted Claims of the patents-in-suit. Apple

1 reserves the right to amend or otherwise modify this disclosure if and when further relevant
2 information is provided by Zeroclick or other circumstances change.

3 **A. Invalidity Claim Charts**

4 Claim charts for the Asserted Claims of the '443 patent are attached as Exhibits A-1
5 through A-18, and claim charts for the Asserted Claims of the '691 patent are attached as
6 Exhibits B-1 through B-18, (collectively, "Invalidity Charts"). The Invalidity Charts identify
7 where specifically in each item of prior art each element of each Asserted Claim is found. Each
8 Invalidity Chart identifies by citation the disclosures within the prior art reference(s) that teach
9 the relevant claim elements, limitations, and/or rationale supporting the combination(s). Any
10 physical embodiments of the references described in the Invalidity Charts that were publicly
11 available during the relevant time period also constitute prior art.

12 While Apple has identified citations in the references for the claim limitations, each and
13 every disclosure of the same limitation in the same reference is not necessarily identified. In an
14 effort to focus the issues, Apple cites only portions of the references, even when a reference may
15 contain additional support for or disclosure of a particular claim element. Where Apple cites a
16 particular figure, table, or video in or relating to a prior art reference, the citation should be
17 understood to encompass any text referring or relating to the directly cited material, in addition
18 to the directly cited material itself. Similarly, where a cited portion of text refers to a figure,
19 table, and/or video, the citation should be understood to include the figure as well. For
20 dependent claims, Apple's contentions and Invalidity Charts should be understood to incorporate
21 by reference the prior art disclosures and teachings cited for the claim(s) from which the
22 dependent claims depend.

23 Apple's reference to a prior art particular computer, software program, device, or product
24 in these contentions should be interpreted as a reference to the product itself and any
25 corresponding patents, publications, or product literature cited in these contentions that relates to
26 the cited computer software program, device, or product. In addition, Apple may rely on other
27 documents or things that have not yet been located to support its contentions regarding such prior
28

1 art computer(s), software program(s), device(s), or product(s) that are referenced in these
2 contentions.

3 For any claim limitation that Zeroclick alleges is not disclosed in a particular prior art
4 reference, Apple reserves the right to assert that such limitation is inherent, that the limitation
5 would have been obvious to one of ordinary skill in the art at the relevant time, and/or that the
6 limitation is disclosed in one or more prior art references that individually or in combination
7 would have rendered the asserted claim obvious.

8 Apple further reserves the right to identify and rely on additional art or teachings within
9 the cited art. Unless otherwise stated, it should be presumed that Apple intends to rely upon each
10 reference in its entirety to the extent relevant and/or appropriate, including references cited in
11 and/or referenced within the prior art identified below.

12 The prior art references produced by Apple reflect the “state of the art” as of the
13 purported effective filing date of the patents-in-suit and/or the alleged invention date of the
14 Asserted Claims of the patents-in-suit. These references illustrate the scope and content of the
15 prior art, the knowledge of those skilled in the relevant field, as well as the motivations of skilled
16 persons to modify and combine known systems and components during the relevant time period.
17 Persons of ordinary skill in the art read a prior art reference as a whole, and in the context of
18 other publications and literature. Accordingly, Apple may rely on uncited portions of the prior
19 art references and on other publications and expert testimony to provide context, and as aids to
20 understanding and interpreting the portions of references that are cited. Apple may also rely on
21 uncited portions of the prior art references, other publications, and the testimony of experts to
22 establish that a person of ordinary skill in the art would have been motivated to modify or
23 combine certain of the cited references so as to render the claims obvious.

24 **B. Invalidity of the ’443 Patent Based on 35 U.S.C. §§ 102 and**
25 **103**

26 The Asserted Claims of the ’443 patent are invalid as anticipated under 35 U.S.C. §
27 102(a), (b), (e), and/or (g), and/or rendered obvious under 35 U.S.C. § 103 by the following prior
28

art references as set forth below. The combinations that render each claim obvious are identified in the individual charts.

Chart No.	Primary Reference	Claims Anticipated	Claims Rendered Obvious
A-1	U.S. Patent No. 5,745,719 (“Falcon ’719”)	-	19-20
A-2	U.S. Patent No. 6,859,909 (“Lerner ’909”)	19	19-20
A-3	The Design and Evaluation of Marking Menus (“Kurtenbach”)	19	19-20
A-4	U.S. Patent No. 6,073,036 (“Heikkinen ’036”)	19, 20	19-20
A-5	U.S. Patent 6,211,856 (“Choi ’856”)	19	19-20
A-6	IBM Simon	19-20	19-20
A-7	Ericsson R380	19, 20	19-20
A-8	U.S. Patent No. 5,721,853 (“Smith ’853”)	-	19-20
A-9	U.S. Patent No. 5,463,725 (“Henckel ’725”)	19	19-20
A-10	U.S. Patent No. 6,466,197 (“Kim ’197”)	-	19-20
A-11	Star7 Prototype Touch Screen System (“the Star7 System”)	19	19-20
A-12	U.S. Patent No. 5,347,295 (“Agulnick ’295”)	19	19-20
A-13	Apple Newton MessagePad (“Apple Newton”)	19	19-20
A-14	U.S. Patent No. 5,745,116 (“Pisutha-Arnond ’116”)	19, 20	19-20
A-15	Plaisant Touch Screen System (“the Plaisant System”)	19	19-20

Chart No.	Primary Reference	Claims Anticipated	Claims Rendered Obvious
A-16	U.S. Patent No. 5,923,908 (“Schrock ’908”)	19	19-20
A-17	U.S. Patent No. 5,570,113 (“Zetts ’113”)	19	19-20
A-18	EO Personal Communicator with PenPoint OS	19, 20	19-20

1. Anticipation

Claim 19 recites:

A device capable of executing software comprising:

- a touch-sensitive screen configured to detect being touched by a user’s finger without requiring an exertion of pressure on the screen;
- a processor connected to the touch-sensitive screen and configured to receive from the screen information regarding locations touched by the user’s finger;
- executable user interface code stored in a memory connected to the processor; the user interface code executable by the processor;
- the user interface code being configured to detect one or more locations touched by a movement of the user’s finger on the screen without requiring the exertion of pressure and determine therefrom a selected operation; and
- the user interface code is further configured to cause one or more selected operations, which includes one or more functions available to the user interface code of the device, to deactivate while the user’s finger is touching one or more locations on the screen.

Claim 19 is anticipated at least by the following prior art references: the Plaisant System and Schrock ’908. A more detailed disclosure of how these prior art references anticipate claim 19 of the ’443 patent is provided in Exhibits A-15 and A-16. These are merely exemplary anticipatory references. The complete set of references that anticipate claims 19 and 20 is identified in the table above.

1 **Plaisant System** anticipates claim 19. The Plaisant System was not disclosed to, or
 2 considered by, the USPTO during the prosecution of the '443 patent. It was developed in 1990-
 3 1992 by researchers at the University of Maryland to conduct one or more usability studies of six
 4 different touchscreen toggle designs around 1990-92, and thus qualifies as prior art against the
 5 Asserted Claims of the '443 patent at least under pre-AIA §§ 102(a) and (b). The Plaisant
 6 System and studies are described in various publications, including articles from June 1990,²
 7 November 1990,³ and May 1992,⁴ and a video⁵ from 1991 narrated by Catherine Plaisant.

8 The Plaisant System allowed a user to select an operation, such as turning off a device, by
 9 moving the slider toggle with his or her finger from the ON position to the OFF position on the
 10 user interface, as shown in Figure 2 below. (*See, e.g.*, Plaisant Nov. 1990 at 5-6 (“If the device is
 11 ON the pointer is on the ON side. Users can then grab the pointer and slide it to the other side. . .
 12 . A click is heard when the state changes (high pitch for ON, low pitch for OFF).”); Plaisant
 13 May 1992 at 667-68 (same), Figure 2.)

24
 25 ² A new era for touchscreen applications: High precision, dragging icons, and refined
 feedback, Andrew Sears, et al., June 1990 (“Plaisant June 1990”).

26 ³ Touchscreen Toggle Switches: Push or Slide? Design issues and usability study,
 Catherine Plaisant, et al., Nov. 1990 (“Plaisant Nov. 1990”).

27 ⁴ Touchscreen Toggle Design, Catherine Plaisant, et al., May 3-7, 1992 (“Plaisant May
 1992”).

28 ⁵ TouchscreenToggle DesignVideo, Catherine Plaisant (1991),
<https://www.youtube.com/watch?v=wFWbdxicvK0>.

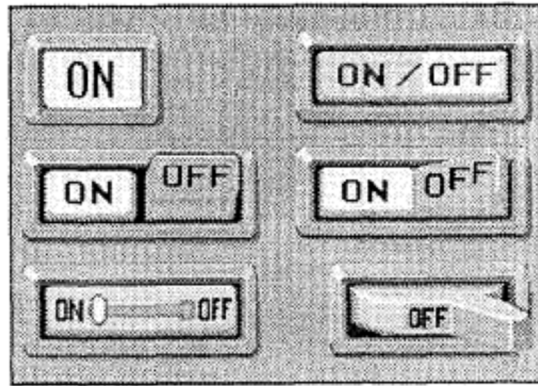


Figure 2: The six toggles: one-button, “words”, two button, rocker, slider and lever. In the tested application users did see several lines of devices names with the corresponding toggles on the side (only one type of toggle is used at a time).

Moreover, the Plaisant System was configured to deactivate a selected operation while the user’s finger is touching one or more locations on the screen. For example, if the user moved her finger off of the pointer before the pointer reached the OFF position, the pointer would spring back to the ON position. (See, e.g., Plaisant Nov. 1990 at 5-6 (“If the device is ON the pointer is on the ON side. Users can then grab the pointer and slide it to the other side. If the finger is released before reaching the other side the pointer springs back to its previous position.”); Plaisant May 1992 at 667-68 (same), Figure 2.) The user could also deactivate a selected operation by not completing the movement from ON to OFF and, instead, returning the pointer to the original position. (*Id.*)

The Plaisant System was equipped with a MicroTouch capacitive touch-sensitive screen, which is configured to detect being touched by a user’s finger without requiring an exertion of pressure on the screen. (See, e.g., Plaisant Nov. 1990 at 4 (Plaisant System was equipped with a MicroTouch touchscreen that “returns a continuous flow of coordinates with a 1024x1024 resolution”); Sears Oct. 1992 at 3 (“The MicroTouch touchscreen is a capacitive touchscreen that provides continuous information about the location of a touch on a 1024x1024 grid.”).) Thus, to the extent the various Plaisant publications and Plaisant video that describe the Plaisant System do not expressly disclose detecting finger movement on the touch-sensitive screen “without

requiring an exertion of pressure on the screen,” the limitation is inherently disclosed by the use of the capacitive MicroTouch touchscreen.

Exhibit A15 further identifies how specifically the Plaisant System teaches each element of each asserted claim.

Schrock '908 also anticipates claim 19. Schrock '908 was not disclosed to, or considered by, the United States Patent Office (USPTO) during the prosecution of the '443 patent. Schrock '908 issued on July 13, 1999, and thus qualifies as prior art against the Asserted Claims of the '443 patent at least under pre-AIA §§ 102(a), (b), and (e).

Schrock '908 teaches a camera having a touch-sensitive screen and a user interface configured to detect movement of a user's finger and thereby selecting an operation within the camera, such as activating the shutter or regulating the zoom operation of the camera. (*See, e.g.*, Schrock '908 at Abstract, 4:33-40.) For example, to activate the shutter, the user touches the shutter icon 28 with his or her finger and moves the icon from 28a to 28b by sliding the finger on the touch-sensitive screen, as indicated by Figure 2 below. (*See, e.g.*, Schrock '908 at 4:26-40, Fig. 2.)

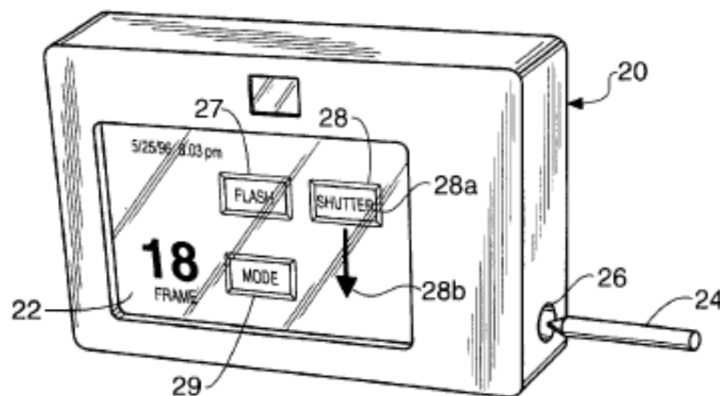


Fig. 2

Schrock '908 further teaches that, if the user's finger does not follow the path from A to B but is moved in a different direction on the touch-sensitive screen, the shutter operation is deactivated. (*See, e.g.*, Schrock '908 at 4:49-63, Fig. 4.) During deactivation, the camera clears

1 any parameters calculated for performing the shutter operation. (*See, e.g.*, Schrock '908 at 4:49-
2 63, Fig. 4.)

3 Schrock '908 further teaches that the touch-sensitive screen may be a capacitive touch-
4 sensitive screen, which is configured to detect being touched by a user's finger without requiring
5 an exertion of pressure on the screen. (*See, e.g.*, Schrock '908 at 3:14-23, 3:46-49.)

6 Exhibit A16 further identifies where specifically in Schrock '908 each element of claim
7 19 is found.

8 **2. Obviousness**

9 As set forth below and in the Invalidity Charts attached as Exhibits A-1 to A-18, to the
10 extent the foregoing references are found not to anticipate the Asserted Claims of the '443
11 patent, the foregoing references render the asserted claims obvious under 35 U.S.C. § 103 either
12 alone or in combination with each other or one or more of the other references identified above.
13 The inclusion of certain exemplary combinations in these Invalidity Charts does not exclude
14 other combinations. The combinations are not meant to be exhaustive. Apple contends that it
15 would have been obvious to a person of ordinary skill in the art to combine any of the various
16 references cited herein so as to practice the Asserted Claims of the '443 patent. Apple reserves
17 its rights to identify additional specific combinations as well as to detail and explain such
18 combinations.

19 The Asserted Claims of the '443 patent, under Zeroclick's apparent read in its
20 Infringement Contentions, as best understood by Apple, disclose in essence the following
21 features: a processor, software, memory, a touch sensitive screen that does not require pressure,
22 and determining or deactivating operations through a user interface on the touch-sensitive screen.
23 Claim 20 further recites a mobile phone. Zeroclick did not "invent" any of these features.
24 Rather, as discussed below and more fully in the attached Exhibits A-1 to A-18, each element of
25 the Asserted Claims of the '443 patent is fully disclosed in the prior art.

26 At the time of the purported effective filing and/or alleged invention dates of the '443
27 patent, processors, software, and memory were conventional computer components.
28

1 Furthermore, capacitive touch-sensitive screens, which detect a finger touching the screen
2 without require the exertion of pressure, were developed in the 1970s, long before the purported
3 effective filing date of the '443 patent. (*See, e.g.*, A New Principle for an X-Y Touch Screen
4 (describing a new capacitive touch-sensitive screen).) Computer terminals with capacitive
5 touch-sensitive screens were commercially available as early as the 1970s and 80s. (*See, e.g.*,
6 How CERN broke the software barrier at 791 (capacitive touch-sensitive screens developed by
7 CERN commercially available in 1977); The first Capacitave Touch Screens at CERN at 4-5
8 (first capacitive touch-sensitive screen was commercialized in 1980 by NESELCO.)) Zeroclick
9 therefore did not invent a touch-sensitive screen configured to “detect being touched by a user’s
10 finger without requiring an exertion of pressure on the screen” or “detect one or more locations
11 touched by a movement of the user’s finger on the screen without requiring the exertion of
12 pressure” as recited in claim 19.

13 Furthermore, the concept of determining or deactivating operations through a user
14 interface on a touch-sensitive screen was common practice. (*See, e.g.*, Schrock '908 at 4:49-63,
15 Fig. 4; Henckel '725 at 1:51-57, 3:3-26, 4:25-52, Figs. 2 and 4; Plaisant Nov. 1990 at 5-6 (“If the
16 device is ON the pointer is on the ON side. Users can then grab the pointer and slide it to the
17 other side. If the finger is released before reaching the other side the pointer springs back to its
18 previous position.”); Plaisant May 1992 at 667-68 (same).) In many ways, this is the very
19 purpose for employing touch-sensitive screens in electronic devices. By the time of filing,
20 portable digital devices had already been using finger-operated, touch-sensitive screens to select
21 or deactivate operations for several years. (*See, e.g.*, Apple Newton, IBM Simon, Ericsson
22 R380, Star7 System, and EO Personal Communicator.)

23 Finally, mobile phones with touch-sensitive screens were known many years before the
24 purported effective filing date of the '443 patent. (*See, e.g.*, Examiner’s Official Notice, Final
25 Rejection dated March 11, 2013 at 16 (“[B]oth the concept and the advantages of using a mobile
26 phone or specially utilizing a touch sensitive screen mobile phone is notoriously well known and
27 expected in the art.”); *see also* Pisutha-Arnond '116 at 2:51-67, Figs. 1, 3, 5-8; Hsu '860 at 2:57-
28

60; IBM Simon User Manual at 9-11, 45-47; Ericsson R380 User's Manual at 23-26, 68-73, 94-103.)

As explained herein and/or in the accompanying Invalidity Charts, in the event that any of the Asserted Claims of the '443 patent is not found anticipated based on a determination that some feature of the claim is not in an item of prior art, it would have been obvious to a person of ordinary skill in the art as of the purported effective filing date of the '443 patent and/or the alleged invention date of the Asserted Claims of the '443 patent to combine the various references cited herein so as to practice the Asserted Claims of the '443 patent. The prior-art item renders the claim obvious because, as discussed above, the missing feature was known to persons skilled in the art in the field at the time, could have been added by those persons to the device or method disclosed by the prior art, and adding that known feature would yield predictable results, so that the subject matter of the claim as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art. *See KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007).

The motivation to combine comes from many sources, including the prior art (specific and as a whole), common knowledge, common sense, predictability, expectations, industry trends, design incentives or need, market demand or pressure, market forces, obviousness to try, the nature of the problem faced, and/or knowledge possessed by a person of ordinary skill. Apple reserves the right to rely on the knowledge of those skilled in the art, the testimony of expert witnesses, and/or other prior art, to show that it would have been obvious to include the allegedly missing limitation and to explain the motivation to combine the prior art elements.

For example, to the extent that any reference identified above does not disclose the use of a touch-sensitive screen that does not require pressure (i.e. a capacitive touchscreen), it would have been obvious to a person of ordinary skill in the art at the time of the invention of the '443 patent to implement the graphical user interface ("GUI") disclosed in that reference on a capacitive touchscreen. The motivation to do so is particularly strong because capacitive touchscreens sought to solve the same problem and come from the same field as non-capacitive touchscreens: both are human interfaces that respond to touch. It would have been obvious to

1 try the combination or modification in light of design incentives to: eliminate the need for a
2 stylus to provide input, frontal shielding, and a uniformly conductive surface (*see, e.g.*, Hsu '860
3 at 2:7-21); improve device durability (*id.* at 3:1-5, FIG. 1); improve positioning accuracy and
4 weather resistance without calibration (*id.* at 3:9-16); allow greater transparency in the screen
5 (*id.* at 3:16-18); and eliminate shape constraints imposed by the requirement of a flexible
6 substrate (*id.* at 3:19-25). Moreover, the prior art teaches or suggests making the combination or
7 modification claimed in the patent. In fact, the Examiner in the prosecution of the '443 patent
8 took Official Notice that "it would have been obvious to incorporate a user's finger operating on
9 touch sensitive screen." (Examiner's Official Notice, Non-Final Rejection dated December 4,
10 2012 at 7, emphasis added.) Therefore, a person of ordinary skill in the art would have been
11 motivated to modify screens on electronic devices to respond to a user's touch without requiring
12 pressure.

13 As another example, to the extent that any reference identified above does not disclose
14 deactivation of an operation while the user's finger is touching the screen, it would have been
15 obvious to a person of skill in the art as of the purported effective filing date of the '443 patent to
16 add this feature to the user interfaces taught by the prior art references cited herein. One of
17 ordinary skill in the art would have been motivated to modify these interfaces so that the user
18 interface code is further configured to cause one or more selected operations to deactivate while
19 the user's finger is touching one or more locations on the screen, at least, because it would allow
20 the user more and faster control over the gesture based command. Modifying user interfaces to
21 cause one or more selected operations to deactivate while the user's finger is touching one or
22 more locations on the screen would have been straightforward and predictable.

23 Finally, to the extent that any reference identified above does not disclose the use of a
24 mobile phone, it would have been obvious to a person of skill in the art as of the purported
25 effective filing date of the '443 patent and/or the alleged invention date of claim 20 of the '443
26 patent to combine the user interfaces taught by Schrock '908, the Plaisant System, Henckel '725,
27 the Star7 System, and other prior art references cited herein, with references disclosing mobile
28 phones, such as IBM Simon, Ericsson R380, Pisutha-Arnond '116, and Hsu '860. The

1 motivation to do so is particularly strong because mobile phones and touchscreen interfaces relate
2 to the same field of endeavor: the field of human-interface design. The idea of incorporating
3 capacitive touch screens into digital handheld devices (*e.g.*, mobile phones) preceded the
4 purported effective filing date of the '443 patent by years. (*See, e.g.*, Hsu '860 at 2:57-60, 2:66-
5 3:25, 4:4-23, Fig. 1; Schrock '908 at 3:14-23, 3:46-49.) In fact, the Examiner in the prosecution
6 of the '443 patent took "Official Notice . . . that both the concept and the advantages of using a
7 mobile phone or specially utilizing a touch sensitive screen mobile phone is notoriously well
8 known and expected in the art." (Examiner's Official Notice, Final Rejection dated March 11,
9 2013 at 16.) Therefore, a person of ordinary skill in the art would have been motivated to
10 combine the references disclosed above with a mobile phone.

11 The following discussion of IBM Simon, Ericsson R380, Henckel '725, Star7 System,
12 Apple Newton, and Pisutha-Arnond '116, which render claim 19 obvious, illustrate the
13 motivation to combine with any one of multiple prior art references cited herein that disclose
14 capacitive touch-sensitive screen sensing. A more detailed disclosure of how these prior art
15 references render obvious claims 19 of the '443 patent is provided in Exhibits A-6, A-7, A9, A-
16 11, A-13, and A-14. These are merely exemplary references that render claim 19 obvious. The
17 complete set of references that render claims 19 and 20 obvious is identified in the table in
18 Section II.B above. A detailed disclosure of how these prior art references render obvious claims
19 19 and 20 of the '443 patent is provided in Exhibits A-1 to A-18.

20 **IBM Simon** anticipates and/or renders obvious claim 19. IBM Simon was not disclosed
21 to, or considered by, the USPTO during the prosecution of the '443 patent. IBM Simon was in
22 public use or on sale in August 1994, and thus qualifies as prior art against the Asserted Claims
23 of the '443 patent at least under pre-AIA §§ 102(a) and (b). IBM Simon discloses a gesture
24 based user interface for interacting with a touch screen of a phone using a human finger. (*See,*
25 *e.g.*, IBM Simon User Manual at 9-11.) IBM Simon teaches a user interface capable of detecting
26 movement of a pointer device to select an operation, *e.g.*, handwriting, manipulating a fax, and
27 deletion of text. (*Id.* at 45-47.) IBM Simon also discloses using slider buttons (*id.*, at 23 and 63)
28

1 or checkbox features (*id.* at 10) to deactivate various features while the user's finger is touching
2 the screen.

3 To the extent IBM Simon does not expressly disclose the use of a touch-sensitive screen
4 that is capable of detecting movement of a finger without requiring exertion of pressure, such
5 screens, *e.g.*, capacitive touch-sensitive screens, were known in the art long before the purported
6 effective filing date of the '443 patent. For example, numerous references cited herein disclose
7 either expressly or inherently the use and benefits of capacitive touch-sensitive screens. (*See*,
8 *e.g.*, Plaisant System (included a MicroTouch touchscreen, a capacitive touch-sensitive screen);
9 Hsu '860 at 2:66-3:25 (describing the benefits of capacitive touch-sensitive screens over, *e.g.*,
10 resistive touch-sensitive screens); Plaisant June 1990 at 19 (noting that capacitive touch-sensitive
11 screens are "better for tasks that involve dragging objects on the screen").) A person of ordinary
12 skill in the art would have understood that the benefits of capacitive touch-sensitive screens
13 would have improved on the user interface taught by IBM Simon. For example, a person of
14 ordinary skill in the art would have appreciated that the touchscreen interface disclosed in IBM
15 Simon would have been improved if the user could interact with the mobile phone screen by
16 sliding his finger without having to exert pressure on the screen. A person of skill in the art
17 would have understood that such combination would improve the usability of the invention
18 taught by IBM Simon because it would allow the user to more easily perform the user interface
19 operations taught by IBM Simon.

20 A person of ordinary skill in the art would further have understood that implementing the
21 touch screen user interface taught by IBM Simon using the capacitive proximity sensing system
22 and touch screen taught by Hsu '860, the capacitive touch-sensitive screen taught by Schrock
23 '908, or the capacitive touch-sensitive screen used in the Plaisant System would have been
24 straightforward and predictable. Hsu '860, Schrock '908, the Plaisant System, and IBM Simon
25 all disclose user interfaces implemented on a touch-sensitive screens that respond to finger
26 movement. (*See, e.g.*, Hsu '860 at 2:57-60, 4:4-23, 5:22-53, 6:14-37, Figs.1-4; Schrock '908 at
27 3:14-23, 3:46-49; Plaisant System; IBM Simon User Manual at 9-11, 23, 45-47, and 63.) In
28 addition, Hsu '860 specifically teaches applying a capacitive touch-sensitive screen to a cell

1 phone like the IBM Simon. (Hsu '860 at 2:57-60.) Therefore, a person of ordinary skill would
2 be able to implement the user interface of IBM Simon on the capacitive touch-sensitive screens,
3 which detect being touched by a user's finger without requiring an exertion of pressure on the
4 screen, taught or used by these other prior art references.

5 Exhibit A-6 further identifies how IBM Simon, alone or in combination with other
6 references, renders obvious claim 19.

7 **Ericsson R380** also anticipates and/or renders obvious claim 19. Ericsson R380 was not
8 disclosed to, or considered by, the USPTO during the prosecution of the '443 patent. Ericsson
9 R380 was in public use or on sale in 2000, and thus qualifies as prior art against the Asserted
10 Claims of the '443 patent at least under pre-AIA §§ 102(a) and (b). Ericsson R380 discloses a
11 gesture based user interface for interacting with a touch screen of a phone. (*See, e.g.*, Ericsson
12 R380 User's Manual at 23-26 and 68-73.) Ericsson R380 teaches a user interface capable of
13 detecting movement of a pointer device to select an operation, *e.g.*, handwriting and/or deletion
14 of text. (*Id.* at 23-26, 68-73, and 94-103.) Ericsson R380 also discloses deactivating a selected
15 operation (*e.g.*, entering and leaving "extended mode") while the stylus is touching the screen.
16 (*See, e.g., id.*)

17 To the extent Ericsson R380 does not expressly disclose the use of a touch-sensitive
18 screen that is capable of detecting movement of a finger without requiring exertion of pressure,
19 such screens, *e.g.*, capacitive touch-sensitive screens, were, as discussed above, known in the art
20 long before the purported effective filing date of the '443 patent. A person of ordinary skill in
21 the art would have understood that the benefits of capacitive touch-sensitive screens would have
22 improved on the user interface taught by Ericsson R380. For example, a person of ordinary skill
23 in the art would have appreciated that the touchscreen interface disclosed in Ericsson R380
24 would have been improved if the user could interact with the mobile phone screen by sliding his
25 finger without having to exert pressure on the screen. A person of skill in the art would have
26 understood that such combination would improve the usability of the invention taught by
27 Ericsson R380 because it would allow the user to more easily perform the user interface
28 operations taught by Ericsson R380.

1 A person of ordinary skill in the art would further have understood that implementing the
2 touch screen user interface taught by Ericsson R380 using the capacitive proximity sensing
3 system and touch screen taught by Hsu '860, the capacitive touch-sensitive screen taught by
4 Schrock '908, or the capacitive touch-sensitive screen used in the Plaisant System would have
5 been straightforward and predictable. Hsu '860, Schrock '908, the Plaisant System, and Ericsson
6 R380 all disclose user interfaces implemented on a touch-sensitive screen that respond to finger
7 movement. (*See, e.g.*, Hsu '860 at 2:57-60, 4:4-23, 5:22-53, 6:14-37, Figs.1-4; Schrock '908 at
8 3:14-23, 3:46-49; Plaisant System; Ericsson R380 User's Manual at 23-26, 68-73, 94-103.) In
9 addition, Hsu '860 specifically teaches applying a capacitive touch-sensitive screen to a cell
10 phone. (Hsu '860 at 2:57-60.) Therefore, a person of ordinary skill would be able to modify the
11 user interface of Ericsson R380 such that it implemented the capacitive touch-sensitive screens,
12 which detect being touched by a user's finger without requiring an exertion of pressure on the
13 screen, taught or used by these other prior art references.

14 Exhibit A-7 further identifies how Ericsson R380, alone or in combination with other
15 references, renders obvious claim 19.

16 **Henckel '725** also anticipates and/or renders obvious claim 19. Henckel '725 was not
17 disclosed to, or considered by, the USPTO during the prosecution of the '443 patent. Henckel
18 '725 issued on October 31, 1995, and thus qualifies as prior art against the Asserted Claims of
19 the '443 patent at least under pre-AIA §§ 102(a), (b), and (e). Henckel '725 discloses a user
20 interface for interacting with an electronic version of a book or magazine on a touch-sensitive
21 screen. Henckel '725 teaches that the user interface is capable of detecting movement of the
22 user's finger to select an operation, such as turning a single page or activating a page flipping
23 operation. (*See, e.g.*, Henckel '725 at 1:51-57, 4:25-52, Figs. 2 and 4.) Henckel '725 also
24 discloses deactivating a selected operation while the user's finger is touching the screen, *e.g.*
25 canceling the turning of a page or deactivating the page flipping function. (*See, e.g.*, Henckel
26 '725 at 3:3-26, '725 at 4:44-52 ("The user may also, if desired, slide his or her finger completely
27 off the book into the background area 14, which also causes the page flipping function to
28 cease."), Figs. 2 and 4.)

1 To the extent Henckel '725 does not expressly disclose the use of a touch-sensitive screen
2 that is capable of detecting movement of a finger without requiring exertion of pressure, such
3 screens, *e.g.*, capacitive touch-sensitive screens, were, as discussed above, known in the art long
4 before the purported effective filing date of the '443 patent. A person of ordinary skill in the art
5 would have understood that the benefits of capacitive touch-sensitive screens would have
6 improved on the user interface taught by Henckel '725. For example, a person of ordinary skill
7 in the art would have appreciated that the touchscreen interface disclosed in Henckel '725 would
8 have been improved if the user could interact with the electronic book or magazine by sliding his
9 finger without having to exert pressure on the screen. A person of skill in the art would have
10 understood that such combination would improve the usability of the invention taught by
11 Henckel '725 because it would allow the user to more easily turn the pages of the electronic
12 book or magazine disclosed in Henckel '725.

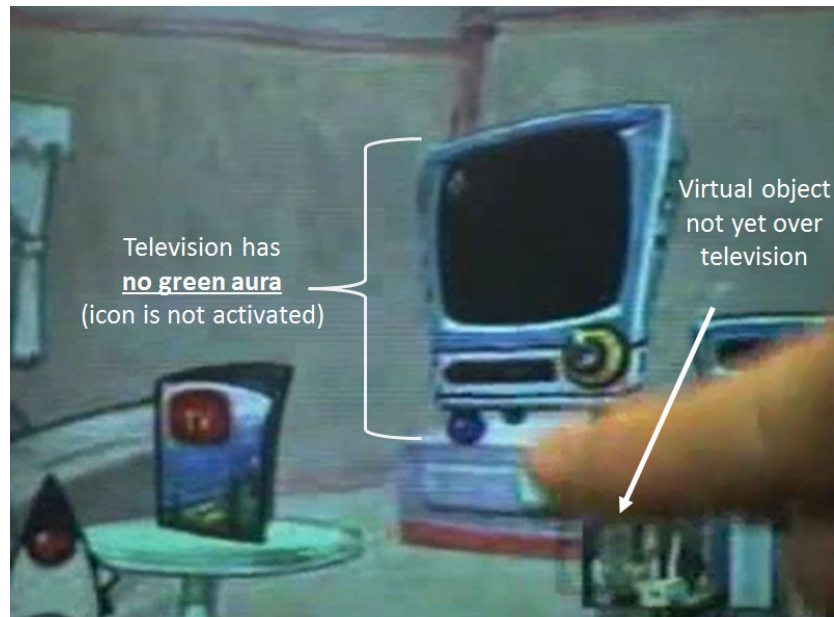
13 A person of ordinary skill in the art would further have understood that implementing the
14 touch screen user interface taught by Henckel '725 using the capacitive proximity sensing
15 system and touch screen taught by Hsu '860, the capacitive touch-sensitive screen taught by
16 Schrock '908, or the capacitive touch-sensitive screen used in the Plaisant System would have
17 been straightforward and predictable. Hsu '860, Schrock '908, the Plaisant System, and Henckel
18 '725 all disclose user interfaces implemented on a touch-sensitive screen that respond to finger
19 movement. (*See, e.g.*, Hsu '860 at 2:57-60, 4:4-23, 5:22-53, 6:14-37, Figs.1-4; Schrock '908 at
20 3:14-23, 3:46-49; Plaisant System; Henckel '725 at 1:51-57, 3:3-26, 4:25-52, Figs. 2 and 4.)
21 Therefore, a person of ordinary skill would be able to modify the user interface of Henckel '725
22 such that it implemented the capacitive touch-sensitive screens, which detect being touched by a
23 user's finger without requiring an exertion of pressure on the screen, taught or used by these
24 other prior art references.

25 Exhibit A9 further identifies how Henckel '725, alone or in combination with other
26 references, renders obvious claim 19.

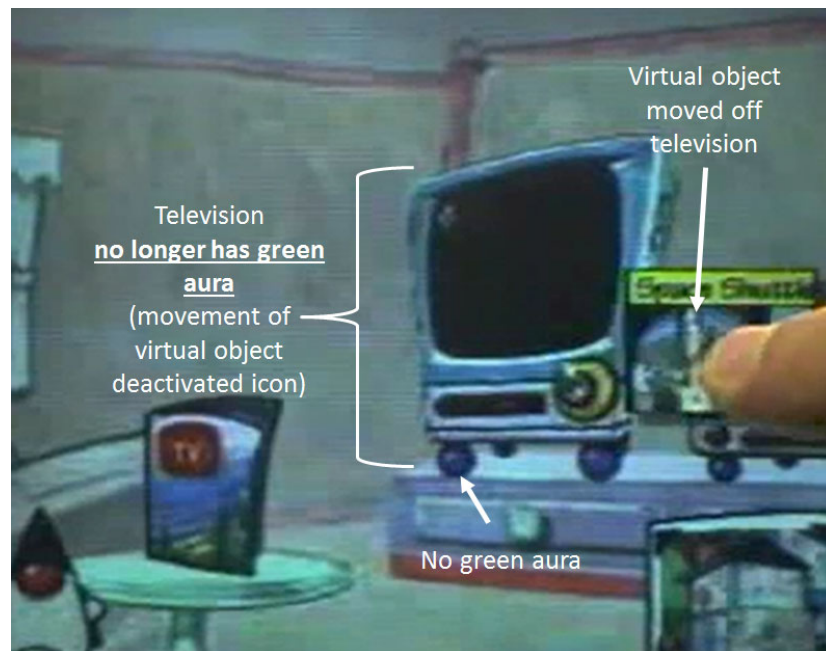
27 **Star7 System** also anticipates and/or renders obvious claim 19. The Star7 System's
28 features and functionality are disclosed, in part, in the Star7 Video and in U.S. Patent No.

1 6,160,551 (“Naughton ’551”), included in these contentions. Neither the Star7 System, Star7
2 Video, nor Naughton ’551 was disclosed to, or considered by, the USPTO during the prosecution
3 of the ’443 patent. The Star7 System was developed by Sun Microsystems, Inc. in 1991-92, and
4 thus qualifies as prior art against the Asserted Claims of the ’443 patent at least under pre-AIA
5 §§ 102(a) and (b). The Star7 System was a hand-held, portable computer with a user interface
6 on a touch-sensitive screen and wireless/radio capabilities. (Star7 Video at 0:05-19.) It allowed
7 users to navigate and move virtual objects displayed on the touch-sensitive screen. (*Id.*)

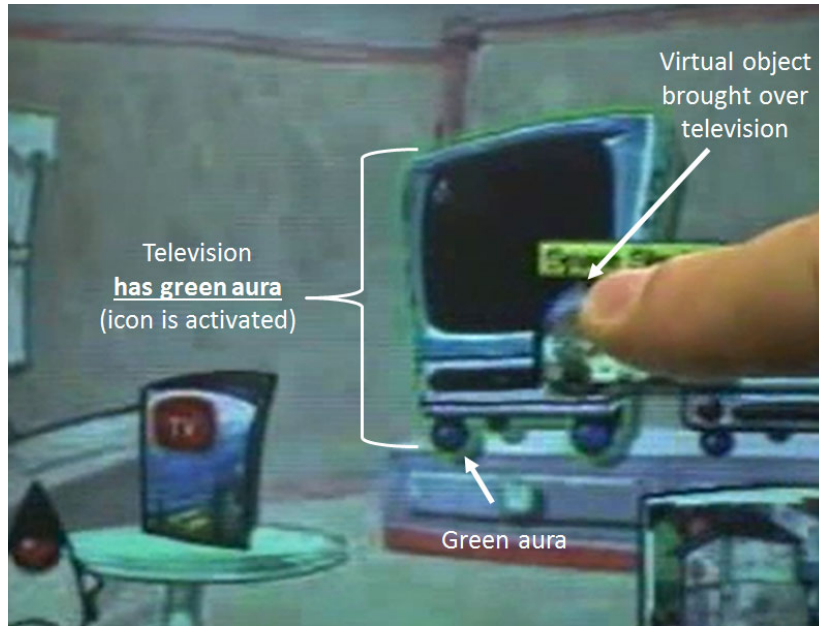
8 The Star7 System includes a user interface capable of detecting movement of a user’s
9 finger on the screen and determining therefrom a selected operation, *e.g.*, moving a virtual object
10 from one area to another. (*See, e.g.*, Star7 Video at 7:41-7:53.) The video shows how this
11 interface meets the claimed “deactivat[ion of a function] while the user’s finger is touching one
12 or more locations on the screen.” For example, the video shows a sequence in which a virtual
13 television icon becomes activated, as indicated by a green aura around the icon, when a user
14 drags a virtual object over the icon. (*See* still images of Star7 Video at 7:49 and 7:50 below.)
15 The icon deactivates, as indicated by the loss of its green aura, when the user drags the virtual
16 object with his finger off of the TV icon. (*See* still image of Star7 Video at 7:51 below.) The
17 images and video show that this deactivation takes place while the user’s finger is still touching
18 the screen. (*Id.*)



(Star7 Video at 7:49 (annotated), television icon deactivated (no green aura.))



(Star7 Video at 7:50 (annotated), television icon activates because virtual object brought over icon (note green aura.))



(Star7 Video at 7:51 (annotated), the icon loses its green aura and “deactivate[s] while the user’s finger is touching one or more locations on the screen.”)

To the extent Star7 System does not expressly disclose the use of a touch-sensitive screen that is capable of detecting movement of a finger without requiring exertion of pressure, such screens, *e.g.*, capacitive touch-sensitive screens, were known in the art long before the purported effective filing date of the ’443 patent. For example, numerous references cited herein disclose either expressly or inherently the use and benefits of capacitive touch-sensitive screens. A person of ordinary skill in the art would have understood that the benefits of capacitive touch-sensitive screens would improve on the Star7 System. For example, Plaisant June 1990 teaches that capacitive touch-sensitive screens are “better for tasks that involve dragging objects on the screen.” (Plaisant June 1990 at 19.) A person of skill in the art would, therefore, have been motivated to combine the touchscreen interface used in the Star7 System with one or more of the prior art references disclosing a capacitive touch-sensitive screen. The motivation to combine comes from the known benefits of capacitive touch-sensitive screens over other types of touch screen that require an exertion of pressure, especially as it relates to moving the user’s finger on the touch screen. In particular, a person of ordinary skill in the art would have appreciated that

1 the touchscreen interface used in Star7 System would have been improved if the user could
2 perform the disclosed operations by sliding his finger without having to exert pressure on the
3 screen. A person of ordinary skill in the art would have understood that such combination would
4 improve the usability of the invention taught by Star7 System because it would allow the user to
5 more easily perform the available touch screen operations.

6 Exhibit A-11 further identifies how Star7 System, alone or in combination with other
7 references, renders obvious claim 19.

8 **Apple Newton** also anticipates and/or renders obvious claim 19. The Apple Newton was
9 not disclosed to, or considered by, the USPTO during the prosecution of the '443 patent. The
10 Apple Newton was in public use or on sale in August 1993, and thus qualifies as prior art against
11 the Asserted Claims of the '443 patent at least under pre-AIA §§ 102(a) and (b). The Apple
12 Newton discloses a gesture based user interface for interacting with a hand-held message pad.
13 (*See, e.g.*, Newton MessagePad Handbook at 13-19, 57-69.) Apple Newton teaches a user
14 interface capable of detecting movement of a pointer device to select an operation, *e.g.*,
15 handwriting. (*Id.* at 44-45.) Apple Newton also discloses deactivating a selected operation (*e.g.*,
16 deactivating a selection of text, removing a portion text, or removing a portion of a drawing)
17 while the stylus is touching the screen. (*See, e.g.*, Newton MessagePad Handbook at 58-62.)

18 To the extent Apple Newton does not expressly disclose the use of a touch-sensitive
19 screen that is capable of detecting movement of a finger without requiring exertion of pressure,
20 such screens, *e.g.*, capacitive touch-sensitive screens, were known in the art long before the
21 purported effective filing date of the '443 patent. For example, numerous references cited herein
22 disclose either expressly or inherently the use and benefits of capacitive touch-sensitive screens.
23 (*See, e.g.*, Plaisant System (included a MicroTouch touchscreen, a capacitive touch-sensitive
24 screen); Hsu '860 at 2:66-3:25 (describing the benefits of capacitive touch-sensitive screens
25 over, *e.g.*, resistive touch-sensitive screens); Plaisant June 1990 at 19 (noting that capacitive
26 touch-sensitive screens are “better for tasks that involve dragging objects on the screen”).) A
27 person of ordinary skill in the art would have understood that the benefits of capacitive touch-
28 sensitive screens would have improved on the user interface taught by Apple Newton. For

1 example, a person of ordinary skill in the art would have appreciated that the touchscreen
2 interface disclosed in Apple Newton would have been improved if the user could interact with
3 the touch-sensitive screen by sliding his finger without having to exert pressure on the screen. A
4 person of skill in the art would have understood that such combination would improve the
5 usability of the invention taught by Apple Newton because it would allow the user to more easily
6 perform the user interface operations taught by Apple Newton.

7 A person of ordinary skill in the art would further have understood that implementing the
8 touch screen user interface taught by Apple Newton using the capacitive proximity sensing
9 system and touch screen taught by Hsu '860, the capacitive touch-sensitive screen taught by
10 Schrock '908, or the capacitive touch-sensitive screen used in the Plaisant System would have
11 been straightforward and predictable. Hsu '860, Schrock '908, the Plaisant System, and Apple
12 Newton all disclose user interfaces implemented on a touch-sensitive screen that respond to
13 finger movement. (*See, e.g.*, Hsu '860 at 2:57-60, 4:4-23, 5:22-53, 6:14-37, Figs.1-4; Schrock
14 '908 at 3:14-23, 3:46-49; Plaisant System; Newton MessagePad Handbook at 13-19, 44-45, 57-
15 69.) In addition, Hsu '860 specifically teaches applying a capacitive touch-sensitive screen to
16 "hand held devices" such as "personal digital assistants" and hand held computers. (Hsu '860 at
17 2:57-60.) Therefore, a person of ordinary skill would be able to modify the user interface of
18 Apple Newton such that it implemented the capacitive touch-sensitive screens taught or used by
19 these other prior art references to detect being touched by a user's finger without requiring an
20 exertion of pressure on the screen.

21 Exhibit A-13 further identifies how the Apple Newton, alone or in combination with
22 other references, renders obvious claim 19.

23 **Pisutha-Arnond '116** also anticipates and/or renders obvious claim 19. Pisutha-Arnond
24 '116 was not disclosed to, or considered by, the USPTO during the prosecution of the '443
25 patent. While the USPTO considered Pisutha-Arnond '116 during prosecution of the parent
26 application that issued as the '691 patent, the Examiner did not consider the aspects of Pisutha-
27 Arnond '116 discussed below relating to selection and activation using its graphical user
28 interface. Pisutha-Arnond '116 issued on April 28, 1998, and thus qualifies as prior art against

1 the Asserted Claims of the '443 patent at least under pre-AIA §§ 102(a), (b), and (e). Pisutha-
2 Arnond '116 discloses a gesture-based user interface for interacting with a touch-sensitive screen
3 on a mobile phone. (*See, e.g.*, Pisutha-Arnond '116 at 2:62-67, 3:23-40, 4:11-39, 5:14-30, 5:48-
4 55, Figs. 1, 5-8.) Pisutha-Arnond '116 teaches a user interface capable of detecting movement of
5 a pointer device, such as a user's finger, to select an operation, *e.g.* replying to an email.
6 Pisutha-Arnond '116 also discloses deactivating a selected operation while the user's finger is
7 touching the screen, *e.g.*, by using gestures to bypass the display of certain user interface option.
8 (*See, e.g.*, Pisutha-Arnond '116 at 3:23-40, 4:11-39, 4:56-5:13, Figs. 1, 5-8.)

9 To the extent Pisutha-Arnond '116 does not expressly disclose the use of a touch-
10 sensitive screen that is capable of detecting movement of a finger without requiring exertion of
11 pressure, such screens, *e.g.*, capacitive touch-sensitive screens, were known in the art long before
12 the purported effective filing date of the '443 patent. For example, numerous references cited
13 herein disclose either expressly or inherently the use and benefits of capacitive touch-sensitive
14 screens. (*See, e.g.*, Plaisant System (included a MicroTouch touchscreen, a capacitive touch-
15 sensitive screen); Hsu '860 at 2:66-3:25 (describing the benefits of capacitive touch-sensitive
16 screens over, *e.g.*, resistive touch-sensitive screens); Plaisant June 1990 at 19 (noting that
17 capacitive touch-sensitive screens are "better for tasks that involve dragging objects on the
18 screen"); Schrock '908.) A person of ordinary skill in the art would have understood that the
19 benefits of capacitive touch-sensitive screens would have improved on the user interface taught
20 by Pisutha-Arnond '116. For example, a person of ordinary skill in the art would have
21 appreciated that the touchscreen interface disclosed in Pisutha-Arnond '116 would have been
22 improved if the user could interact with the mobile phone screen by sliding his finger without
23 having to exert pressure on the screen. A person of skill in the art would have understood that
24 such combination would improve the usability of the invention taught by Pisutha-Arnond '116
25 because it would allow the user to more easily perform the user interface operations taught by
26 Pisutha-Arnond '116.

27 A person of ordinary skill in the art would further have understood that implementing the
28 touch screen user interface taught by Pisutha-Arnond '116 using the capacitive proximity sensing

system and touch screen taught by Hsu '860, the capacitive touch-sensitive screen taught by Schrock '908, or the capacitive touch-sensitive screen used in the Plaisant System would have been straightforward and predictable. Hsu '860, Schrock '908, the Plaisant System, and Pisutha-Arnond '116 all disclose user interfaces implemented on a touch-sensitive screen that respond to finger movement. (*See, e.g.*, Hsu '860 at 2:57-60, 4:4-23, 5:22-53, 6:14-37, Figs.1-4; Schrock '908 at 3:14-23, 3:46-49; Plaisant System; Pisutha-Arnond '116 at 2:62-67, 3:23-40, 4:11-39, 5:14-30, 5:48-55, Figs. 5-8.) In addition, Hsu '860 specifically teaches applying a capacitive touch-sensitive screen to a cell phone. (Hsu '860 at 2:57-60.) Therefore, a person of ordinary skill would be able to modify the user interface of Pisutha-Arnond '116 such that it implemented the capacitive touch-sensitive screens, which detect being touched by a user's finger without requiring an exertion of pressure on the screen, taught or used by these other prior art references.

Exhibit A-14 further identifies how Pisutha-Arnond '116, alone or in combination with other references, renders obvious claim 19.

C. Invalidity of the '691 Patent Based on 35 U.S.C. §§ 102 and 103

The Asserted Claims of the '691 patent are invalid as anticipated under 35 U.S.C. § 102(a), (b), (e), and/or (g), and/or render obvious under 35 U.S.C. § 103 by the following prior art references as set forth below. The combinations that render each claim obvious are identified in the individual charts.

Chart No.	Primary Reference	Claims Anticipated	Claims Rendered Obvious
B-1	U.S. Patent No. 5,745,719 ("Falcon '719")	2-6, 12-16, 24, 26, 28, 42, 44, 45, 47, 49; 52-56, 62-66, 74, 76, 78, 92, 94, 95, 98, 100	All asserted claims

Chart No.	Primary Reference	Claims Anticipated	Claims Rendered Obvious
B-2	U.S. Patent No. 6,859,909 (“Lerner ’909”)	2-6, 12-16, 24, 26, 28, 29-31, 35, 36, 42, 44, 45, 47, 49, 52-56, 62-66, 74, 76, 78, 79, 81, 85, 86, 92, 94, 95, 98, 100	All asserted claims
B-3	The Design and Evaluation of Marking Menus (“Kurtenbach”)	2-6, 12-16, 24, 26, 28, 29-31, 35, 36, 42, 44, 45, 47, 49, 52-56, 62-66, 74, 76, 78, 79, 81, 85, 86, 92, 94, 95, 98, 100	All asserted claims
B-4	U.S. Patent No. 6,073,036 (“Heikkinen ’036”)	All asserted claims	All asserted claims
B-5	U.S. Patent 6,211,856 (“Choi ’856”)	2-6, 12-16, 24, 26, 28, 29-31, 35, 36, 42, 44, 45, 47, 49, 52-56, 62-66, 74, 76, 78, 79, 81, 85, 86, 92, 94, 95, 98, 100	All asserted claims
B-6	Apple Newton MessagePad (“Apple Newton”)	2-6, 12-16, 24, 26, 28-31, 35, 36, 42, 44, 45, 47, 49; 52-56, 62-66, 74, 76, 78, 79, 81, 85, 86, 92, 94, 95, 98, 100	All asserted claims
B-7	IBM Simon	All asserted claims	All asserted claims
B-8	Ericsson R380	All asserted claims	All asserted claims
B-9	U.S. Patent No. 5,745,116 (“Pisutha-Arnond ’116”)	All asserted claims	All asserted claims

Chart No.	Primary Reference	Claims Anticipated	Claims Rendered Obvious
B-10	Plaisant Touch Screen System ("the Plaisant System")	2-6, 12-16, 24, 26, 28-31, 35, 36, 42, 44, 45, 47, 52-56, 62-66, 74, 76, 78, 79, 81, 85, 86, 92, 94, 95, 98	All asserted claims
B-11	U.S. Patent No. 5,347,295 ("Agulnick '295")	2-6, 12-16, 24, 26, 28-30, 36, 42, 44, 45, 47, 49; 52-56, 62-66, 74, 76, 78, 79, 86, 92, 94, 95, 98, 100	All asserted claims
B-12	U.S. Patent No. 5,721,853 ("Smith '853")	2-6, 12-16, 24, 26, 28, 42, 44-45, 47, 52-56, 62-66, 74, 76, 78, 92, 94-95, and 98	All asserted claims
B-13	U.S. Patent No. 5,923,908 ("Schrock '908")	2-6, 12-16, 24, 26, 28-30, 36, 42, 44, 45, 47, 49; 52-56, 62-66, 74, 76, 78, 79, 86, 92, 94, 95, 98, 100	All asserted claims
B-14	U.S. Patent No. 6,466,197 ("Kim '197")	2-6, 12-16, 24, 26, 28, 29-30, 35, 36, 42, 44, 45, 47, 52-56, 62-66, 74, 76, 78, 79, 85, 86, 92, 94, 95, 98	All asserted claims
B-15	Star7 Prototype Touch Screen System ("the Star7 System")	2-6, 12-16, 24, 26, 28, 29-31, 35, 36, 42, 44, 45, 47, 49, 52-56, 62-66, 74, 76, 78, 79, 81, 85, 86, 92, 94, 95, 98, 100	All asserted claims

Chart No.	Primary Reference	Claims Anticipated	Claims Rendered Obvious
B-16	U.S. Patent No. 5,570,113 (“Zetts ’113”)	2-6, 12-16, 24, 26, 28-31, 35, 36, 42, 44, 45, 47, 52-56, 62-66, 74, 76, 78, 79, 81, 85, 86, 92, 94, 95, 98	All asserted claims
B-17	U.S. Patent No. 5,463,725 (“Henckel ’725”)	2-6, 12-16, 24, 26, 28-31, 35, 36, 42, 44, 45, 47, 49; 52-56, 62-66, 74, 76, 78, 79, 81, 85, 86, 92, 94, 95, 98, 100	All asserted claims
B-18	EO Personal Communicator with PenPoint OS	All asserted claims	All asserted claims

1. Anticipation

a. Claim 2

Claim 2 recites:

A graphical user interface (GUI), which may comprise an update of an existing program, that may fully operate a GUI by a two step method of movement of a pointer (0) to operate one or more functions within the GUI,

wherein, said existing program is any existing program that can operate the movement of the pointer (0) over a screen (300) and has one or more functions operated by one or more other methods apart from said two step method,

and/or one or more functions operated by said one or more other methods in said existing program can be updated to operate by said two step method,

wherein said GUI executes one or more functions within the GUI by the completion of the following said two step method:

first said pointer (0) is immediately adjacent or passes within a control area (1), which is an area of the screen (300) that may be any size including from a pixel on the screen (300) to occupying the whole screen (300),

1 and second by the completion of a subsequent movement
2 of said pointer (0) according to a specified movement
3 generates a ‘click’ event, thereby triggering one or more
4 functions within the GUI.

5 Claim 52 is a method claim that recites the same steps recited in claim 2.

6 Claims 2 and 52 are anticipated at least by the following prior art references: Pisutha-
7 Arnond ’116, Plaisant System, Schrock ’908, Kim ’197, Star7 System, and Henckel ’725. A
8 more detailed disclosure of how these prior art references anticipate claims 2 and 52 of the ’691
9 patent is provided in Exhibits B-9, B-10, B-13, B-14, B-15, and B-17. These are merely
10 exemplary anticipatory references. The complete set of references that anticipate the Asserted
11 Claims of the ’691 patent is identified in the table above.

12 **Pisutha-Arnond ’116** anticipates claims 2 and 52. Pisutha-Arnond ’116 issued on April
13 28, 1998, and thus qualifies as prior art against the Asserted Claims of the ’691 patent at least
14 under pre-AIA §§ 102(a), (b), and (e). It was applied by the Examiner during the prosecution of
15 the ’691 patent, but merely for its disclosure that “another pointing device, such as a mouse,
16 joystick, touch-pad, or even a human finger, could be substituted for a pen or stylus (column 2,
17 lines 63-67).” (Office Action dated Nov. 18, 2009 at 17-19.) This citation represents the
18 Examiner’s only consideration of Pisutha-Arnond ’116 in the prosecution history of the ’893
19 application. The Examiner did not rely on (or acknowledge) any of the features relating to the
20 GUI taught by Pisutha-Arnond ’116, which anticipates claim 2. For example, Pisutha-Arnond
21 ’116 discloses a touch-sensitive device (touch-sensitive screen 150 on device 100) using a GUI
22 for detecting and interpreting gesture-based commands made by a human finger. (*See, e.g.,*
23 Pisutha-Arnond ’116 at 2:62-67, FIGs. 3, 5-8.) Pisutha-Arnond ’116 discloses that a completion
24 of a movement of said pointer (pointing device 190 and detected touch on screen, *see* FIGs. 5
25 and 6) according to a specified movement (*e.g.,* line 620 shown in FIGs. 6 and 8) generates a
26 “click” event, thereby triggering one or more functions within the GUI (*e.g.,* the “Reply”
27 function, as shown in FIG. 8). (*See, e.g.,* Pisutha-Arnond ’116 at 4:23-37, 5:1-13; FIGs. 6 and 8.)
28 For example, the completion of this movement from right to left generates a click event that

triggers a function that displays the palette button 454, which prompts the user to reply to the email. (*Id.*) To the extent that claim element pointer (0) is “a visible bitmap representing a button or slider,” as Zeroclick asserts in its Amended Exhibits B1–B3 to its Amended Infringement Contentions, the Pisutha-Arnond ’116 discloses a visible bitmap representing a button.

FIG. 6

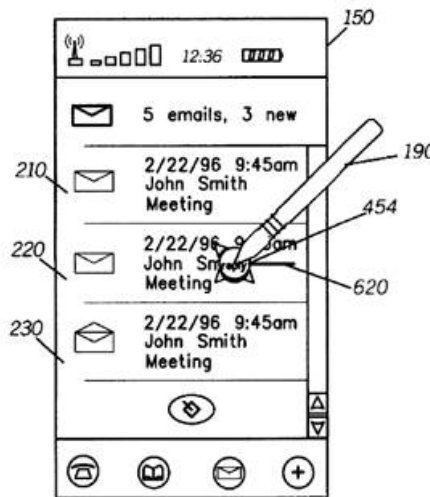


Exhibit B-9 further identifies where specifically in Pisutha-Arnond ’116 each element of each Asserted Claim is found.

Plaisant System also anticipates claims 2 and 52. The Plaisant System was not disclosed to, or considered by, the USPTO during the prosecution of the ’691 patent. It was developed in 1990-1992 by researchers at the University of Maryland to conduct one or more usability studies of six different touchscreen toggle designs around 1990-92, and thus qualifies as prior art against the Asserted Claims of the ’691 patent at least under pre-AIA §§ 102(a) and (b). The Plaisant System discloses a GUI that executes one or more functions. (*See, e.g.*, Plaisant November 1990 at 4, 5 (“When users touch the button the background color darkens and the state changes to OFF when the finger is released . . .”); *see also* Plaisant November 1990 at 6.) The Plaisant System discloses that the GUI operates via a two step method (*e.g.*, select and slide of various “toggle[s]” described in Plaisant November 1990 at 4-6) to operate one or more functions (*e.g.*,

1 Plaisant November 1990 at 1). The Plaisant System discloses a completion of a subsequent
 2 movement (*e.g.*, the slide movement of the select and slide two-step movements) of a pointer
 3 (*e.g.*, contacted area of screen in Plaisant Video under finger at 3:07-3:15, 3:16-3:21, and 3:23-
 4 3:35) according to a specified movement (*e.g.*, sliding finger along Rocker, Slider, and Lever
 5 toggles shown in Plaisant November 1990 at 5-6) generates a “click” event (toggles Rocker,
 6 Slider, and Lever toggle on or off), thereby triggering one or more functions within the GUI
 7 (Plaisant November 1990 at 1, 9). To the extent that claim element pointer (0) is “a visible
 8 bitmap representing a button or slider,” as Zeroclick asserts in its Amended Exhibits B1–B3 to
 9 its Amended Infringement Contentions, the Plaisant System discloses a visible bitmap
 10 representing a slider.



11
 12
 13
 14
 15 (See, *e.g.*, Plaisant Video at 3:18.)



16
 17
 18
 19 (See, *e.g.*, Plaisant Video at 3:19 (“click” event).)

20 Exhibits B-10 further identifies how specifically the Plaisant System teaches each
 21 element of each asserted claim.

22 **Schrock '908** also anticipates claims 2 and 52. Schrock '908 was not disclosed to, or
 23 considered by, the USPTO during the prosecution of the '691 patent. Schrock '908 issued on
 24 July 13, 1999, and thus qualifies as prior art against the Asserted Claims of the '691 patent at
 25 least under pre-AIA §§ 102(a), (b), and (e). Schrock '908 teaches a camera having a touch-
 26 sensitive screen and a GUI that executes one or more functions by the completion of a two step
 27 method. (*See, e.g.*, Schrock '908 at 3:26-40, 46-49.) For example, Schrock '908 teaches that the
 28

shutter of the camera may be triggered using a two-step function that involves moving a shutter icon on the touch-sensitive screen with a finger from a location A to a location B. (*See, e.g.*, Schrock '908 at 3:33-36.) As taught in Schrock '908, the shutter icon corresponds to pointer (0) under Zeroclick's apparent read of claim 2, and the movement of the shutter icon 28 from location 28a to location 28b, as shown in Figure 2 below, corresponds to the required completion of a subsequent movement that generates a click event under Zeroclick's apparent read of claim 2, thereby triggering the shutter function within the GUI. (*See, e.g.*, Schrock '908 at 4:26-40, 4:49-63, Figs. 2 and 4.) To the extent that claim element pointer (0) is "a visible bitmap representing a button or slider," as Zeroclick asserts in its Amended Exhibits B1-B3 to its Amended Infringement Contentions, Schrock '908 discloses a visible bitmap representing a slider.

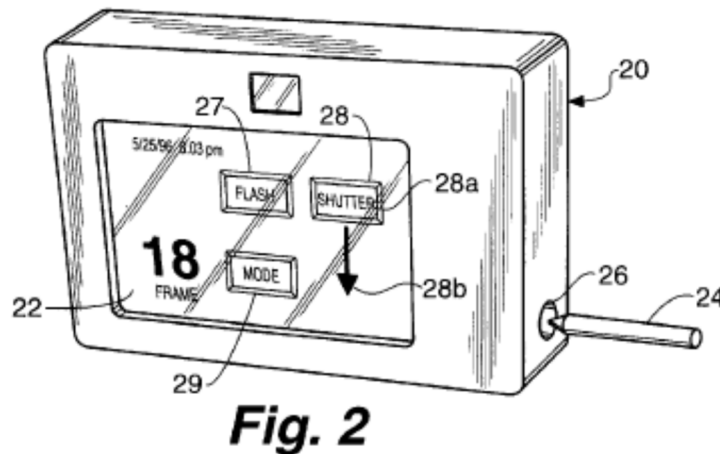


Exhibit B-13 further identifies where specifically in Schrock '908 each element of each Asserted Claim is found.

Kim '197 also anticipates claims 2 and 52. Kim '197 was not disclosed to, or considered by, the USPTO during the prosecution of the '691 patent. Kim '197 was filed on June 28, 1999, and thus qualifies as prior art against the Asserted Claims of the '691 patent at least under pre-AIA § 102(e). Kim '197 teaches "a method for driving a pointing device of a computer system capable of performing the same function as a button click by moving a pointer to a specific direction without clicking a button of the pointing device." (Kim '197 at 3:25-29.) For example, Kim '197 teaches a GUI that makes it "possible to perform the same corresponding button click

functions by moving a pointer a specific direction over a predetermined distance without using a button of a pointing device.” As shown in Figure 3A below, Kim ’197 teaches that the GUI executes a function by the completion of a movement of a pointer according to a two-step method. (Kim ’197 at 4:45-48.) For example, Kim ’197 teaches that moving the pointer 320a from user interface area 305 (i.e., the claimed control area (1)) along a predetermined path to the left 320b and down 320c, generates a control signal (i.e., ‘click’ event) that performs the same function as a button click. (See, e.g., Kim ’197 at 6:22-34, 8:7-17.)

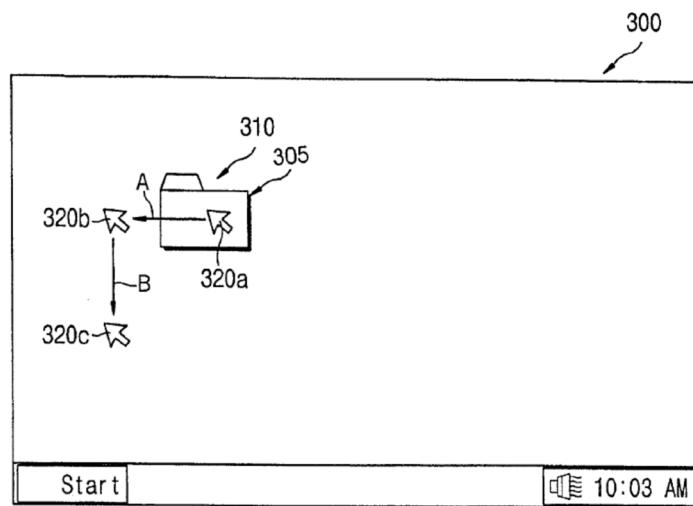
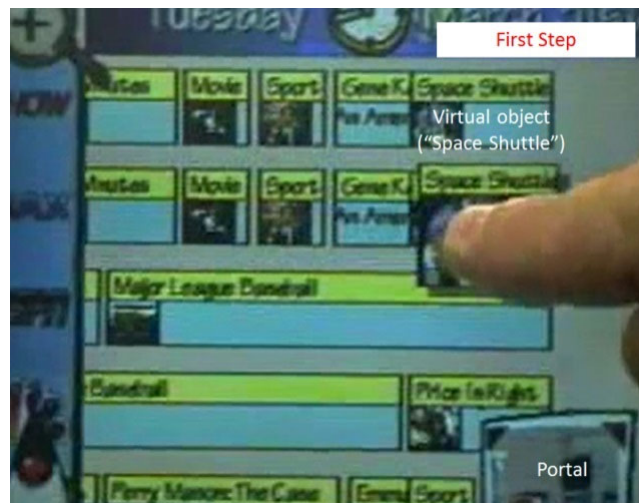


Fig. 3A

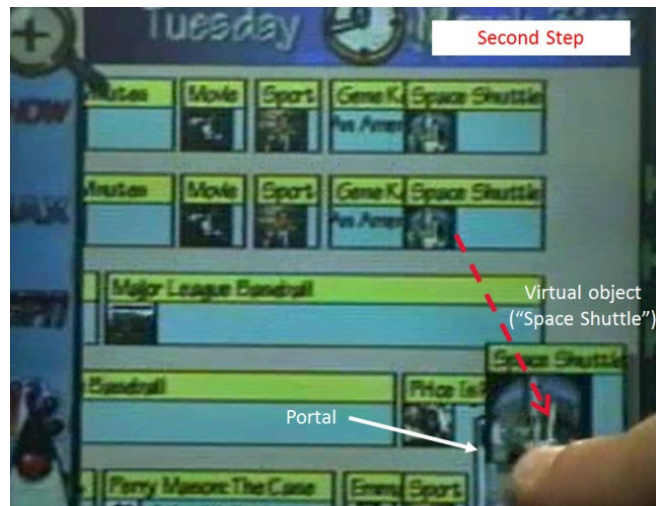
Exhibit B-14 further identifies where specifically in Kim ’197 each element of each Asserted Claim is found.

Star7 System also anticipates claims 2 and 52. Certain features of the Star7 were patented as U.S. Patent No. 6,160,551 (“Naughton ’551”). The Star7 System, Star7 Video, and Naughton ’551 were not disclosed to, or considered by, the USPTO during the prosecution of the ’691 patent. The Star7 System was developed by Sun Microsystems, Inc. in 1991-92, and thus qualifies as prior art against the Asserted Claims of the ’691 patent at least under pre-AIA §§ 102(a) and (b). The Star7 System was a PDA prototype with a touch-sensitive screen. (Star7 Video at 0:05-19.)

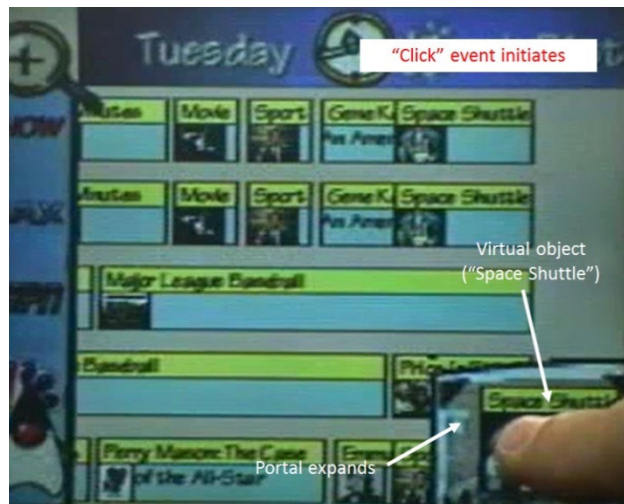
As discussed above, the Star7 System includes a drag and transfer that allows a user to move a virtual object on the touch-sensitive screen from one virtual location to another via a virtual portal. (Star7 Video at 7:41-7:51.) This exemplary two-step method of pointer movement to operate the GUI transfer function proceeds as follows. In the first step, the user places his finger in a control area (e.g., the virtual console) to select an object representing a virtual TV programming guide (*id.* at 7:43). Then, in a second step, the user moves his finger out of the control area, dragging the object to a “portal” in order to change the object’s virtual location within the GUI. (*Id.* at 7:45.) Completion of the second movement of the user’s finger (and dragged object) generates a “click” event, thereby triggering the transfer of the object’s location to a different virtual room within the GUI. (*Id.* at 7:50.)



(Star7 Video at 7:43 (annotated), first step of selecting TV guide “Space Shuttle.”)



(Star7 Video at 7:45, second step of moving TV guide “Space Shuttle” object to portal.)



(Star7 Video at 7:47, “click” event initiates, as visually indicated by expansion of portal.)



(Star7 Video at 7:50, "click" event executes bringing object to a new room.)

Exhibit B-15 further identifies how specifically the Star7 System teaches each element of each asserted claim.

Henckel '725 also anticipates claims 2 and 52. Henckel '725 was not disclosed to, or considered by, the USPTO during the prosecution of the '691 patent. Henckel '725 issued on October 31, 1995, and thus qualifies as prior art against the Asserted Claims of the '691 patent at least under pre-AIA §§ 102(a), (b), (e), and (g). Henckel '725 discloses an e-book reader device with a GUI and a touch-sensitive screen for displaying a book or magazine. Using his finger, the user can manipulate the pages shown on the GUI. For example, the user may cause the device to perform functions by sliding his finger on the screen from one location to another, such as turning a single page of a book or activating a quick page turning feature. (*See, e.g.*, Henckel '725 at Abstract, 1:49-57, 2:16-18, 2:51-3:28, 4:25-52, Figs. 1-4.) As one example, Henckel

'725 teaches that the user may slide his finger from location 36 to location 38 in Figure 4 to activate the quick page turning feature. (See, e.g., Henckel '725 at 4:25-52, Fig. 4.) (Henckel '725 at Fig. 4.)

Exhibit B-17 further identifies how specifically Henckel '725 teaches each element of

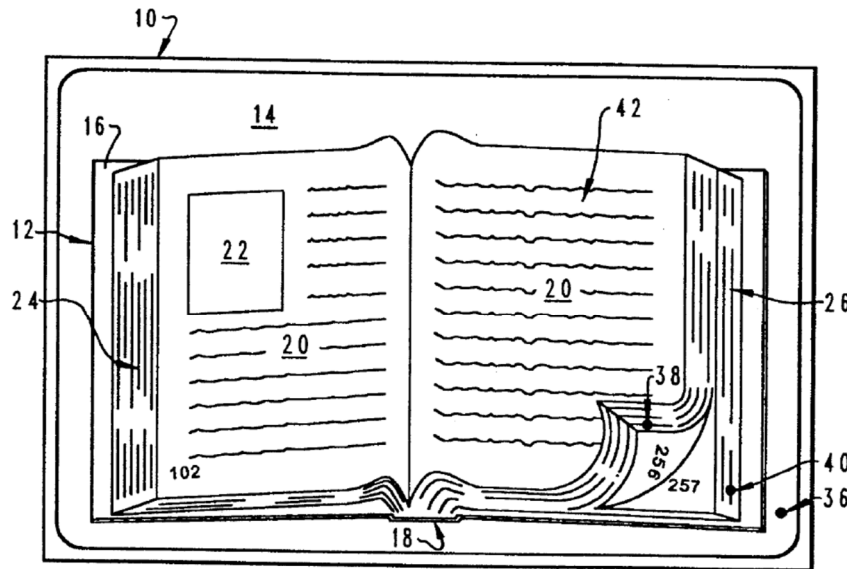


Fig. 4

each asserted claim. (See, e.g., Henckel '725 at 4:25-52, Fig. 4.)

b. Claim 3

Claim 3 recites:

A GUI according to claim 2 wherein, the second step of said two step method is:

second by the completion of said subsequent movement of said pointer (0) within a predetermined path area (3) according to a specified movement generates said 'click' event, which simulates the direct clicking of a control, thereby triggering a function related with said control area (1),

and/or said subsequent movement and/or said predetermined path area (3) of said pointer (0) is adjustable for the purpose of error prevention, so that said one or more functions accessible within the GUI generated by said 'click' event is less likely to be accidentally triggered than if said one or more functions accessible within the GUI was triggered by said pointer (0) being immediately adjacent or moving over said control area (1).

Claim 3 is anticipated by at least Pisutha-Arnond '116, Plaisant System, Schrock '908, Kim '197, Star7 System, and Henckel '725. These references teach the two-step method recited in claim 2 and disclose that the subsequent movement of said pointer (0) within a predetermined path area according to a specified movement generates a 'click' event. For example, Pisutha-Arnond '116 teaches that subsequent movement within the predetermined path defined by the line 620 as shown in Figure 6 triggers the 'click' event. (Pisutha-Arnond '116 at 4:23-37, FIG. 6.) Moreover, the Plaisant System teaches that the movement of the toggle must be from one side to the other (*i.e.*, within a predetermined path). (*See, e.g.*, Plaisant November 1990 at 4-6.) Furthermore, Schrock '908 teaches that the subsequent movement of the shutter icon 28 within the predetermined path are from 28a to 28b triggers the 'click' event. (Schrock '908 at 4:26-45) Kim '197 teaches, for example, that the subsequent movement of pointer 320a within the predetermined path are defined by the left-down movement (*i.e.*, along arrowed path B) shown in Figure 3A triggers the 'click' event. (Kim '197 at 6:22-44.) Moreover, the Star 7 System discloses that the subsequent movement according to a predetermined path from the original location of the icon that is to be moved to the portal through which the icon is moved triggers the 'click' event. (*See, e.g.*, Star7 Video at 7:41-7:51.) Finally, Henckel '725 teaches, *e.g.*, that the subsequent movement within a predetermined path between points 38 and 36 in Figure 4 causes the pages of the book to flip rapidly in increasing or decreasing order, respectively.

Claim 53 is a method claim that recites the same steps recited in claim 3 and is therefore anticipated for the same reasons as described below with respect to claim 3. A more detailed disclosure of how these prior art references anticipate claims 3 and 53 of the '691 patent is provided in Exhibits B-9, B-10, B-13, B-14, B-15, and B-17.

c. Additional Asserted Dependent Claims of the '691 Patent

All of the remaining Asserted Claims of the '691 patent depend from claims 3 or 53. These dependent claims add non-novel limitations relating to the size and nature of the control area (claims 4, 6, 12-14, 54, 56, and 62-64); resetting of the control area (claims 42 and 92); the size and nature of a "predetermined path area" (claims 3, 5, 15-16, 53, 55, and 65-66); the

1 direction of pointer movement (claims 26, 28, 76, and 78); the nature of the pointer (claims 44-
2 45 and 94-95); the use of a touch screen, mobile phone, or “pocket-sized personal computer”
3 (claims 29-36, 47-49, 79-86, and 98-100); or use in conjunction with “other methods to generate
4 said one or more functions within the GUI” (claims 24 and 74).

5 All of the additional limitations of the dependent claims were known in the art well
6 before the effective filing date of the '691 patent. As a result, each of these Asserted Claims of
7 the '691 patent is anticipated by at least by the references identified in the chart above. A
8 detailed disclosure of how these claims are invalid in view of the cited prior art references is
9 provided in Exhibits B-1 through B-18.

10 **2. Obviousness**

11 As set forth below and in the Invalidity Charts attached as Exhibits B-1 to B-18, to the
12 extent the foregoing references are found not to anticipate the Asserted Claims of the '691
13 patent, the foregoing references render the asserted claims obvious under 35 U.S.C. § 103 either
14 alone or in combination with each other or one or more of the other references identified above.
15 The inclusion of certain exemplary combinations in these Invalidity Charts does not exclude
16 other combinations. The combinations are not meant to be exhaustive. Apple contends that it
17 would have been obvious to a person of ordinary skill in the art to combine any of the various
18 references cited herein so as to practice the Asserted Claims of the '691 patent. Apple reserves
19 its rights to identify additional specific combinations as well as to detail and explain such
20 combinations.

21 The Asserted Claims of the '691 patent, under Zeroclick's apparent read in its
22 Infringement Contentions, as best understood by Apple, disclose in essence the following
23 features: a GUI, a pointer, a control area, movement within a predetermined path, and a click
24 event. As discussed above, certain dependent claims further recite the use of a touch screen,
25 mobile phone, or “pocket-sized personal computer.” As with the '443 patent, Zeroclick did not
26 “invent” any of these features. Rather, as discussed below and more fully in the attached
27 Exhibits B-1 to B-18, each element of the Asserted Claims of the '691 patent is fully disclosed in
28 the prior art.

1 At the time of the purported effective filing and/or alleged invention dates of the '691
2 graphical user interfaces and pointer devices (*e.g.*, mice) were conventional computer
3 components. The use of control areas, the movement of pointers within predetermined paths,
4 and clicking are inherent in the use of pointer devices. Moreover, such features were disclosed
5 in various prior art references cited herein. (*See, e.g.*, Schrock '908 at 4:33-67; Henckel '725 at
6 4:25-52; Kim '197 at 6:10-39; the Plaisant System; the Star7 System, the Apple Newton; the
7 Ericsson R380; the EO Personal Communicator.)

8 Furthermore, touch-sensitive screens were developed decades before the purported
9 effective filing date of the '691 patent. (*See, e.g.*, Pisutha-Arnond '116 at 2:62-67, FIGs. 3, 5-8;
10 IBM Simon User Manual at 4, 9-11, 23, 45-47, 60-63; Ericsson R380 User's Manual at 10, 23-
11 25, 68-73, 94-103; Hayhurst '859 at Figs. 1 and 2, 2:17-25, 6:16-24, 10:6-12, 10:20-24; Mead
12 '204 at Abstract, FIG. 1-4, 1:46-2:27, 4:26-5:5; 5:31-54, 8:23-11:35; Schrock '908 at Abstract,
13 FIG. 1, 2, 4, 5-7, 3:24-64, 4:20-67.) Zeroclick therefore did not invent the touch screen recited in
14 claims 29-31, 35-36, and 48-49.

15 Finally, mobile phones with touch-sensitive screens (as recited in claim 48) and pocket
16 sized personal computers with touch-sensitive screens (as recited in claim 49) were known many
17 years before the purported effective filing date of the '691 patent. (*See, e.g.*, Pisutha-Arnond
18 '116 at 2:51-67, Figs. 1, 3, 5-8; Hsu '860 at 2:57-60; IBM Simon User Manual at 9-11, 45-47;
19 Ericsson R380 User's Manual at 23-26, 68-73, 94-103.)

20 As explained herein and/or in the accompanying Invalidity Charts, in the event that any
21 of the Asserted Claims of the '691 patent is not found anticipated based on a determination that
22 some feature of the claim is not in an item of prior art, it would have been obvious to a person of
23 ordinary skill in the art as of the purported effective filing date of the '691 patent and/or the
24 alleged invention date of the Asserted Claims of the '691 patent to combine the various
25 references cited herein so as to practice the Asserted Claims of the '691 patent. The prior-art
26 item renders the claim obvious because, as discussed above, the missing feature was known to
27 persons skilled in the art in the field at the time, could have been added by those persons to the
28 device or method disclosed by the prior art, and adding that known feature would yield

1 predictable results, so that the subject matter of the claim as a whole would have been obvious at
2 the time the invention was made to a person having ordinary skill in the art. *See KSR Int'l Co. v.*
3 *Teleflex, Inc.*, 550 U.S. 398 (2007).

4 The motivation to combine comes from many sources, including the prior art (specific
5 and as a whole), common knowledge, common sense, predictability, expectations, industry
6 trends, design incentives or need, market demand or pressure, market forces, obviousness to try,
7 the nature of the problem faced, and/or knowledge possessed by a person of ordinary skill.
8 Apple reserves the right to rely on the knowledge of those skilled in the art, the testimony of
9 expert witnesses, and/or other prior art, to show that it would have been obvious to include the
10 allegedly missing limitation and to explain the motivation to combine the prior art elements.

11 For example, to the extent that any reference identified above does not disclose the use of
12 a touch-sensitive screen, it would have been obvious to a person of ordinary skill in the art at the
13 time of the invention of the '691 patent to implement the GUI disclosed in that reference on a
14 touchscreen. The motivation to do so is particularly strong because GUIs on non-touch screens
15 sought to solve the same problem and come from the same field as GUIs on touchscreens: both
16 are computer interfaces that respond to input from users. It would have been obvious to try the
17 combination or modification in light of design incentives to: allow users to “manually select a
18 screen object” by “intuitively tap[ing] or draw[ing] a point, on [the] screen object” (*see, e.g.*,
19 *Pisutha-Arnond '116* at 3:28-31); allow “quick access to functions” through relatively “intuitive”
20 gestures, such as striking through text to delete (*id.* at 1:33-42); reduce the need for linear menus
21 and screen buttons which consume display space” (*id.* at 1:54-56); eliminate the need in other
22 capacitive systems for a stylus to provide input, frontal shielding, and a uniformly conductive
23 surface (*Hsu '860* at 2:7-21); improve device durability (*id.* at 3:1-5, FIG. 1); improve
24 positioning accuracy and weather resistance without calibration (*id.* at 3:9-16); allow greater
25 transparency in the screen (*id.* at 3:16-18); and eliminate shape constraints imposed by the
26 requirement of a flexible substrate (*id.* at 3:20-25). Moreover, the prior art teaches or suggests
27 making the combination or modification claimed in the patent. The Examiner in prosecution of
28 the related '443 patent took Official Notice that it would have been obvious to implement a GUI

1 on a touch screen. (Examiner's Official Notice, Final Rejection dated March 11, 2013 at 16.)
2 Therefore, a person of ordinary skill in the art would have been motivated to implement non-
3 touchscreen device GUIs on touchscreens.

4 As another example, to the extent that any reference identified above does not disclose
5 the use of a mobile phone or pocket sized personal computer, it would have been obvious to a
6 person of skill in the art as of the purported effective filing date of the '691 patent and/or the
7 alleged invention date of claims 48 and 49 of the '691 patent to implement the user interfaces
8 taught by Schrock '908, the Plaisant System, Henckel '725, the Star7 System, and other prior art
9 references cited herein, with references disclosing mobile phones and pocket-sized personal
10 computers, such as IBM Simon, Ericsson R380, Pisutha-Arnond '116, and Hsu '860. The
11 motivation to do so is particularly strong because mobile phones and GUIs relate to the same
12 field of endeavor: the field of human-interface design. The idea of incorporating touch screens
13 into digital handheld devices (*e.g.*, mobile phones and pocket-sized personal computers)
14 preceded the purported effective filing date of the '691 patent by years. (*See, e.g.*, Hsu '860 at
15 2:57-60, 2:66-3:25; 4:4-23, Fig. 1; Schrock '908 at 3:14-23, 3:46-49.) In fact, the Examiner in
16 the prosecution of the related '443 patent took "Official Notice . . . that both the concept and the
17 advantages of using a mobile phone or specially utilizing a touch sensitive screen mobile phone
18 is notoriously well known and expected in the art." ('443 patent Examiner's Official Notice,
19 Final Rejection dated March 11, 2013 at 16.) Moreover, the Examiner in the prosecution of the
20 '691 patent took "Official Notice . . . that both the concept and the advantages of working with a
21 different type and size of electronic computing device, such as small (portable) or big (desktop),
22 electrical switch type and computing device with panels is well known and expected in the art."
23 ('691 patent Prosecution History, Final Rejection dated July 22, 2009 at 19.) Therefore, a person
24 of ordinary skill in the art would have been motivated to combine the references disclosed above
25 with a mobile phone or a pocket-sized personal computer.

26 As another example, to the extent that any reference identified above does not disclose
27 pointer (0), it would have been obvious to a person of skill in the art as of the purported effective
28 filing date of the '691 patent and/or the alleged invention date of the Asserted Claims of the '691

1 patent to implement the GUIs taught by Pisutha-Arnond '116, Plaisant System, Schrock '908,
 2 IBM Simon, Ericsson R380, and other prior art references cited herein, with Falcon '719, Smith
 3 '853, or Kim '197, which disclose pointer (0) as an arrow, cursor or other bitmap indicating the
 4 pointer on the computer screen representing the location of the mouse position or pointer device
 5 position in relation to the computer screen, (*see, e.g.*, Kim '197 at Fig. 3A, Fig. 3B, Fig. 3C, Fig.
 6 5, 6:11–18, 6:22–44, 6:45–6:65, 6:66–7:25, 8:23–44). The motivation to combine Kim '197
 7 with the other references cited herein is strong because including pointer (0) could help the user
 8 identify the location of the pointer and more easily and accurately move the pointer to execute
 9 functions within the GUI. Implementing pointer (0) would have been straightforward and
 10 predictable. The '691 patent discusses how it was known in the art that a “typical embodiment
 11 of the conventional graphical user interface GUI” includes “a mouse input” that “moves a mouse
 12 pointer across the computer display.” ('691 patent at 1:36–55.) Therefore, a person of ordinary
 13 skill in the art would have been able to modify the GUIs of the references cited herein such that
 14 they would implement the pointer (0) feature of Kim '197.

15 In light of the number of Asserted Claims of the '691 patent, Apple relies on the detailed
 16 disclosure in Exhibits B-1 to B-18 of how the references identified in the table in Section II.C
 17 above render obvious the Asserted Claims of the '691 patent and of the motivation to combine
 18 any one of multiple prior art references cited herein.

19 **III. INVALIDITY BASED ON 35 U.S.C. § 101**

20 The Asserted Claims are invalid under 35 U.S.C. § 101 as directed to patent-ineligible
 21 subject matter. The Supreme Court has long held that “[l]aws of nature, natural phenomena,
 22 and abstract ideas’ are not patentable.” *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*,
 23 132 S. Ct. 1289, 1293 (2012) (citing *Diamond v. Diehr*, 450 U.S. 175, 185 (1981)). In *Alice*
 24 *Corp. Pty. Ltd. v. CLS Bank International*, the Supreme Court set forth a two-step framework for
 25 determining eligibility of patent claims. 134 S. Ct. 2347, 2355 (2014). First, one determines
 26 whether the claims are directed to a patent-ineligible concept such as an abstract idea. *Id.*
 27 Second, if the claims are directed to patent-ineligible subject matter, one searches for an
 28

1 “inventive concept,” *i.e.*, determines whether anything else in the claims transforms them into
2 patentable subject matter. *Id.*

3 Under the first step of *Alice*, an examination of the Asserted Claims—in light of
4 Zeroclick’s Infringement Contentions—reveals that the Asserted Claims are directed to nothing
5 more than an abstract idea related to controlling devices. For example, the patents state that the
6 purported invention allows “control of the computer” via “a series of pointer movements.” (’443
7 patent at 3:29-30; ’691 patent at 3:32-33.) Furthermore, the claims are entirely devoid of any
8 inventive concept under the second step because nothing in the claims is new or novel, and
9 nothing provides a meaningful limitation over the abstract idea. Thus, there is nothing in the
10 claims that transforms them into a patentable subject matter. As discussed above with respect to
11 invalidity under 35 U.S.C. §§ 102 and 103, all elements of the Asserted Claims were well known
12 long before the purported effective filing date of the patents-in-suit. For example, the
13 functionality of the recited user interface code was either inherent in all touch-sensitive devices
14 or explicitly disclosed in numerous prior art references before the effective filing date, as
15 identified above. In addition, capacitive touchscreens, which detect movement of a finger on the
16 screen without requiring an exertion of pressure, were invented in the 1970s, and incorporated
17 into commercial touchscreen devices in the 1970s and 1980s. (*See, e.g.*, A New Principle for an
18 X-Y Touch Screen (describing a new capacitive touch-sensitive screen); How CERN Broke the
19 Software Barrier at 791 (capacitive touch-sensitive screens developed by CERN commercially
20 available in 1977); The First Capacitive Touch Screens at CERN (same).) And mobile phones
21 with touch-sensitive screens were available at least as early as 1994. (*See, e.g.*, IBM Simon.)
22 Accordingly, the Asserted Claims of the patents-in-suit are invalid as directed to patent-ineligible
23 subject matter.

24 **IV. INVALIDITY BASED ON 35 U.S.C. § 112**

25 Apple’s invalidity contentions under 35 U.S.C. § 112 are set forth below. Where a claim
26 is identified as failing to meet one or more requirements of § 112, it is to be understood that all
27 claims that depend from such a claim likewise are invalid pursuant to 35 U.S.C. § 112. In
28 making these contentions, Apple is not necessarily proposing a specific level of ordinary skill in

the art, and these contentions are based at least in part on what Zeroclick may contend is the level of ordinary skill in the art. Apple does not concede that Zeroclick's contentions as to the level of ordinary skill in the art are proper and may contest any such contentions. Apple further reserves the right to modify and supplement, without prejudice, its Invalidity Contentions in light of positions taken by Zeroclick or its expert witness(es) concerning claim construction, infringement, equivalents and/or invalidity issues and/or claim construction positions adopted by the Court.

A. Invalidity of the '443 Patent Based on 35 U.S.C. § 112

1. The Asserted Claims of the '443 Patent Lack Enablement and/or Written Description Under 35 U.S.C. § 112, ¶ 1

As discussed above, the Asserted Claims of the '443 patent are invalid as anticipated and/or obvious in view of the prior art. To the extent that Zeroclick contends that the limitations of the Asserted Claims are not found in the prior art, then they are also not adequately described or enabled by the patent specification as explained below. The Asserted Claims of the '443 patent are not adequately described because the original specification as filed does not convey to those skilled in the art that, as of the relevant filing date, the named inventor was in possession of the full scope of the claimed invention. In addition, these claims are not enabled such that one of ordinary skill in the art would understand how to practice the claimed invention without undue experimentation. As such, the original specification as filed does not "contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same." 35 U.S.C. § 112, ¶ 1.

For example, the Asserted Claims of the '443 patent recite a device comprising "a touch-sensitive screen configured to detect being touched by a user's finger without requiring an exertion of pressure on the screen." As Zeroclick acknowledges in its Infringement Contentions, a capacitive touchscreen is one example of a touch-sensitive screen that can detect being touched by a finger without requiring an exertion of pressure. As discussed above, however, capacitive touchscreens had been in the prior art for decades before the purported effective filing date of the

1 '443 patent. This limitation is thus not a novel aspect of the Asserted Claims of the '443 patent.
2 To the extent that Zeroclick contends otherwise, the claims are invalid under 35 U.S.C. § 112, ¶
3 1 because there is no evidence that demonstrates that the inventor was in possession of the
4 invention at the time the application for the patent was filed. The specification of the '443 patent
5 as originally filed fails to describe a device having a touch-sensitive screen that falls within the
6 scope of the claims, and fails to provide any disclosure that would enable a person of ordinary
7 skill in the art to make such a device.

8 Moreover, the Asserted Claims of the '443 patent recite user interface code configured to
9 “detect one or more locations touched by a movement of the user’s finger on the screen . . . and
10 determine therefrom a selected operation” and “cause one or more selected operations . . . to
11 deactivate while the user’s finger is touching one or more locations on the screen.” These
12 limitations describe functionality inherently present in virtually all user interfaces running on a
13 touch-sensitive screen. To the extent that Zeroclick contends otherwise, the claims are invalid
14 under 35 U.S.C. § 112, ¶ 1 because there is no evidence that demonstrates that the inventor was
15 in possession of the invention at the time the application for the patent was filed. The
16 specification of the '443 patent as originally filed fails to describe or enable user interface code
17 configured to detect finger location, select an operation, or deactivate an operation that falls
18 within the scope of the claims. The specification fails to disclose an algorithm to perform these
19 functions that is not coextensive with a microprocessor or general purpose computer. *See EON*
20 *Corp. IP Holdings LLC v. AT&T Mobility LLC*, 785 F.3d 616, 623 (Fed. Cir. 2015); *see also*
21 *Ergo Licensing, LLC v. CareFusion 303, Inc.*, 673 F.3d 1361, 1364-65 (Fed. Cir. 2012) (“If
22 special programming is required for a general-purpose computer to perform the corresponding
23 claimed function, then the default rule requiring disclosure of an algorithm applies.”). “A
24 patentee cannot avoid providing specificity as to structure simply because someone of ordinary
25 skill in the art would be able to devise a means to perform the claimed function.” *Blackboard,*
26 *Inc. v. Desire2Learn, Inc.*, 574 F.3d 1371, 1385 (Fed. Cir. 2009). Moreover, there is “nothing in
27 the specification to help cabin the scope of the functional language.” *See ePlus, Inc. v. Lawson*
28 *Software, Inc.*, 700 F.3d 509, 519 (Fed. Cir. 2012).

1 **2. The Asserted Claims of the '443 Patent are Indefinite Under 35**
2 **U.S.C. § 112, ¶ 2**

3 The Asserted Claims of the '443 patent are invalid as indefinite because they do not
4 “particularly point[] out and distinctly claim[] the subject matter.” 35 U.S.C. § 112, ¶ 2. A
5 patent is indefinite “if its claims, read in light of the specification delineating the patent, and the
6 prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the
7 scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014).

8 As properly construed, the following limitations of claim 19 are found in the prior art, as
9 described above:

- 10 • “user interface code being configured to detect one or more locations touched by
11 a movement of the user’s finger on the screen without requiring the exertion of
12 pressure and determine therefrom a selected operation,” and
- 13 • “the user interface code is further configured to cause one or more selected
14 operations, which includes one or more functions available to the user interface
15 code of the device, to deactivate while the user’s finger is touching one or more
16 locations on the screen.”

17 To the extent Zeroclick contends that these limitations are not found in the prior art, the Asserted
18 Claims of the '443 patent are invalid under 35 U.S.C. § 112, ¶ 2, because the claims fail to
19 particularly point out and distinctly claim the subject matter regarded as the alleged invention.
20 For example, the following claim terms are not reasonably certain and are nowhere defined or
21 explained with specificity in the patent or prosecution history:

- 22 • “detect,”
- 23 • “one or more locations touched by a movement of the user’s finger,”
- 24 • “determine,”
- 25 • “selected operation,”
- 26 • “one or more functions available to the user interface code of the device,”
- 27 • “deactivate,”
- 28 • “without requiring the exertion of pressure,” and
- “one or more locations on the screen.”

As a result, the claims fail to reasonably apprise those skilled in the art as to their scope when read in light of the specification, rendering the limits of the patent unknown.

3. The Asserted Claims of the '443 Patent Are Indefinite Under 35 U.S.C. § 112, ¶ 6

A claim can be a means-plus-function claim even if it does not use the word “means,” where the claim fails to “recite sufficiently definite structure” or recites a “function without reciting sufficient structure for performing that function.” *See Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1349 (Fed. Cir. 2015); *Media Rights Techs., Inc. v. Capital One Fin'l Corp.*, 800 F.3d 1366 (Fed. Cir. 2015) (means-plus-function limitations in method claims).

When a claim term is a computer-implemented means-plus-function limitation, the Federal Circuit requires that “[a] patent must disclose, at least to the satisfaction of one of ordinary skill in the art, enough of an algorithm to provide the necessary structure under § 112, ¶ 6.” *Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1340 (Fed. Cir. 2008). In other words, “a means-plus-function claim element for which the only disclosed structure is a general purpose computer is invalid if the specification fails to disclose an algorithm for performing the claimed function.” *Net Moneyin, Inc. v. Verisign, Inc.*, 545 F.3d 1359, 1367 (Fed. Cir. 2008); *see also Touchcom, Inc. v. Dresser, Inc.*, 427 F. Supp. 2d 730, 735 (E.D. Tex. 2005) (Ward, J.); *Gobeli Research, Ltd. v. Apple Computer, Inc.*, 384 F. Supp. 2d 1016, 1022-23 (E.D. Tex. 2005) (failure to provide algorithm for performing computer-implemented function is “fatal”).

In *Harris*, the Federal Circuit made clear that the bright-line rule of *WMS Gaming* applies to any “means-plus-function” element in which the function is implemented by a computer or microprocessor. *Harris Corp. v. Ericsson Inc.*, 417 F.3d 1241, 1253 (Fed. Cir. 2005). Simply reciting, for example, “software” without further detail as to the disclosed structure is insufficient. *Id.*; *see also Aristocrat Techs. Austl. PTY Ltd. v. Int'l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008) (As “computers can be programmed to perform very different tasks in very different ways, simply disclosing a computer as the structure . . . does not limit the scope of the claim . . . as required by section 112 paragraph 6.”). Nor can a patentee rely on “a conclusory assertion that one skilled in the art would understand the claimed means despite the failure to

disclose a structure.” *Atmel Corp. v. Info. Storage Devices, Inc.*, 198 F.3d 1374, 1378 (Fed. Cir. 1999); *see also Aristocrat*, 521 F.3d at 1331.

“In a means-plus-function claim in which the disclosed structure is a computer, or microprocessor, programmed to carry out an algorithm, the disclosed structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm.” *WMS Gaming Inc. v. Int’l Game Tech.*, 184 F.3d 1339, 1349 (Fed. Cir. 1999); *see also Harris Corp. v. Ericsson Inc.*, 417 F.3d 1241, 1253 (Fed. Cir. 2005) (“A computer implemented means-plus-function term is limited to the corresponding structure disclosed in the specification and equivalents thereof, and the corresponding structure is the algorithm.”).

At least under Zeroclick’s actual and/or apparent interpretation of the Asserted Claims of the ’443 patent, the following limitations of claim 19 are indefinite means-plus-function limitations because (a) while they do not use the word “means,” the claims fails to recite sufficiently definite structure and recites a function without reciting sufficient structure for performing that function and (b) the specification of the ’443 patent fails to disclose an algorithm for implementing the function:

- “user interface code being configured to detect one or more locations touched by a movement of the user’s finger on the screen without requiring the exertion of pressure,”
- “user interface code being configured to . . . determine therefrom a selected operation,” and
- “user interface code is further configured to cause one or more selected operations . . . to deactivate while the user’s finger is touching one or more locations on the screen.”

To the extent that this limitation is not invalid under 35 U.S.C. § 112, ¶ 6, it is invalid under 35 U.S.C. §§ 102 and 103. As discussed above, the references in Section I disclose touchscreens that do not require the exertion of pressure as well as user interface code configured to detect locations touched by a user’s finger on the screen, determine a selected operation, and cause a selected operation to deactivate.

B. Invalidity of the '691 Patent Based on 35 U.S.C. § 112**1. The Asserted Claims of the '691 Patent Lack Enablement and/or Written Description Under 35 U.S.C. § 112, ¶ 1**

As discussed above, the Asserted Claims of the '691 patent are invalid as anticipated and/or obvious in view of the prior art. To the extent that Zeroclick contends that the limitations of the Asserted Claims are not found in the prior art, then they are also not adequately described or enabled by the patent specification as explained below. The Asserted Claims of the '691 patent are not adequately described because the original specification as filed does not convey to those skilled in the art that, as of the relevant filing date, the named inventor was in possession of the full scope of the claimed invention. In addition, these claims are not enabled such that one of ordinary skill in the art would understand how to practice the claimed invention without undue experimentation. As such, the original specification as filed does not “contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same.” 35 U.S.C. § 112, ¶ 1.

For example, claims 2 and 52 recite “said existing program is any existing program that can operate the movement of the pointer (0) over a screen (300) and has one or more functions operated by one or more other methods apart from said two step method.” This limitation is not novel because various methods of operating a GUI were known in the prior art long before the effective filing date of the '691 patent. To the extent that Zeroclick contends otherwise, the claims are invalid under 35 U.S.C. § 112, ¶ 1 because there is no evidence that demonstrates that the inventor was in possession of the invention at the time the application for the patent was filed. The specification of the '691 patent fails to describe “other methods” that fall within the scope of the claims, and fails to provide any disclosure that would enable a person of ordinary skill in the art to create such other methods.

Furthermore, claims 2 and 52 recite an “update of an existing program, that may fully operate a GUI by a two step method.” This limitation is not novel because updates were known

1 in the prior art long before the effective filing date of the '691 patent. To the extent that
2 Zeroclick contends otherwise, the claims are invalid under 35 U.S.C. § 112, ¶ 1 because there is
3 no evidence that demonstrates that the inventor was in possession of the invention at the time the
4 application for the patent was filed. The specification of the '691 patent fails to describe an
5 “update” that falls within the scope of the claims, and fails to provide any disclosure that would
6 enable a person of ordinary skill in the art to create such an update. The specification fails to
7 disclose an algorithm to perform these functions that is not coextensive with a microprocessor or
8 general purpose computer. *See EON Corp. IP Holdings LLC*, 785 F.3d at 623. “A patentee
9 cannot avoid providing specificity as to structure simply because someone of ordinary skill in the
10 art would be able to devise a means to perform the claimed function.” *Blackboard, Inc.*, 574
11 F.3d at 1385. Moreover, there is “nothing in the specification to help cabin the scope of the
12 functional language.” *See ePlus, Inc.*, 700 F.3d at 519.

13 For example, claims 48 and 99 recite “the computer apparatus is a mobile phone with a
14 touch screen” and claims 49 and 100 recite “the computer apparatus is a pocket-sized personal
15 computer which has a touch screen.” These limitations are not novel because mobile phones
16 with touchscreens and pocket-sized personal computers with touchscreens (*e.g.*, PDAs) were
17 known in the prior art long before the effective filing date of the '691 patent. To the extent that
18 Zeroclick contends otherwise, the claims are invalid under 35 U.S.C. § 112, ¶ 1 because there is
19 no evidence that demonstrates that the inventor was in possession of the invention at the time the
20 application for the patent was filed. The specification of the '691 patent as originally filed fails
21 to describe a mobile phone with a touch screen or a pocket-sized personal computer with a touch
22 screen that falls within the scope of the claims, and fails to provide any disclosure that would
23 enable a person of ordinary skill in the art to make such devices.

24 Moreover, dependent claims 45 and 95 were added during prosecution and recite
25 “wherein said pointer (0) is invisible.” The Claim Construction Order held that “Pointer (0)”
26 must be visible, stating that, “Apple also argues persuasively that dependent claim 45 is invalid
27 for lack of written description, given that the patent does not explain how an invisible pointer
28 could ‘indicate’ its location ‘on the screen’ when the pointer would not be visible to the human

eye,” (ECF No. 77 at 11), and “[t]he ’691 patent fails to meet this requirement [of 35 U.S.C. § 112] as it pertains to an ‘invisible’ pointer because it does not explain how an invisible pointer can ‘indicate’ something,” (*id.* at 11–12).

2. The Asserted Claims of the ’691 Patent Are Indefinite Under 35 U.S.C. § 112, ¶ 2

The Asserted Claims of the ’691 patent are invalid as indefinite because they do not “particularly point[] out and distinctly claim[] the subject matter.” 35 U.S.C. § 112, ¶ 2. A patent is indefinite “if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014).

At least claims 12, 13, 14 15, 35, 62, 63, 64, 65, and 85 are indefinite for lack of antecedent basis. In claims 12 and 62, the term “the appearance” lacks antecedent basis. In claim 13 and 63, the term “visual feedback” lacks antecedent basis. In claim 14 and 64, the term “the movement stages” lacks antecedent basis. In claim 15 and 65, the term “the original position” lacks antecedent basis. In claim 35 and 85, the term “the digit or pen” lacks antecedent basis.

For example, claims 2 and 52 recite “said existing program is any existing program that can operate the movement of the pointer (0) over a screen (300) and has one or more functions operated by one or more *other methods apart from* said two step method, and/or one or more functions operated by said one or more *other methods* in said existing program *can be updated* to operate by said two step method..” Meanwhile, claims 24 and 74 (which indirectly depend on claims 2 and 52, respectively) recite that the claimed “other methods” are used “*in conjunction* with one or more said *other methods* to generate said one or more functions within the GUI.” These limitations are invalid under 35 U.S.C. § 112, ¶ 2 because they do not provide a reasonably clear and exclusive definition of the claimed “other methods” and because operating both “apart from” and “in conjunction with” an “other method” is not possible.

Moreover, claims 2 and 52 recite an “update of an existing program that may fully operate a GUI by a two step method” and “one or more functions within the GUI.” These limitations are invalid under 35 U.S.C. § 112, ¶ 2 because the terms do not provide a reasonably clear and exclusive definition of the claimed update and functions respectively.

Furthermore, claims 24 and 74 are invalid because the use of the term “said one or more functions within the GUI” fails to inform, with reasonable certainty, those skilled in the art about the scope of the invention.

Moreover, claims 16 and 66 are invalid because the term “adjustable to suit” is subjective claim language without any objective boundary. *See, Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1373 (Fed. Cir. 2014) (holding the claim phrase “unobtrusive manner” indefinite because the specification did not “provide a reasonably clear and exclusive definition, leaving the facially subjective claim language without an objective boundary”).

3. The Asserted Claims of the ’691 Patent Are Invalid Under 35 U.S.C. § 112, ¶ 4

Several of the dependent Asserted Claims of the ’691 patent are invalid because they fail to “specify a further limitation of the subject matter claimed” in the claim from which they depend. 35 U.S.C. § 112, ¶ 4.

For example, claims 36 and 86 do not further limit claims 29 and 79, respectively, because they recite all possible touch screens that can display a GUI, which is already claimed implicitly in claim 29.

4. The Asserted Claims of the ’691 Patent Are Indefinite Under 35 U.S.C. § 112, ¶ 6

As discussed above, a claim can be a means-plus-function claim even if it does not use the word “means,” where the claim fails to “recite sufficiently definite structure” or recites a “function without reciting sufficient structure for performing that function.” *See Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1349 (Fed. Cir. 2015); *Media Rights Techs., Inc. v. Capital One Fin’l Corp.*, 800 F.3d 1366 (Fed. Cir. 2015) (means-plus-function limitations in method claims). “[A] means-plus-function claim element for which the only disclosed structure is a

1 general purpose computer is invalid if the specification fails to disclose an algorithm for
2 performing the claimed function.” *Net Moneyin, Inc. v. Verisign, Inc.*, 545 F.3d 1359, 1367
3 (Fed. Cir. 2008).

4 At least under Zeroclick’s actual and/or apparent interpretation of the Asserted Claims of
5 the ’691 patent, the following limitation of claims 2 and 52 is an indefinite means-plus-function
6 limitation because (a) while it does not use the word “means,” the claim fails to recite
7 sufficiently definite structure and recites a function without reciting sufficient structure for
8 performing that function and (b) the specification of the ’691 patent fails to disclose an algorithm
9 for implementing the function: “update of an existing program, that may fully operate a GUI by
10 a two step method.”

11 **V. DOCUMENT PRODUCTION**

12 In connection with its disclosure of these contentions, Apple also produces or makes
13 available for inspection and copying documents required by Patent L.R. 3-4(a) & (b) that are in
14 Apple’s possession, custody or control.⁶

15 Because Zeroclick’s Infringement Contentions do not suggest that detailed information
16 regarding the specifics of the implementation of the software underlying the accused
17 functionality is relevant to determining whether the accused products infringe, Apple has
18 produced or made available for inspection information corresponding to the level of detail
19 presented in Zeroclick’s Infringement Contentions. Apple will respond to any request by
20 Zeroclick for additional information regarding the implementation of the software underlying the
21 accused functionality at the appropriate time.

27 ⁶ Because the Court has not yet entered a protective order in this case, Apple produces
28 these documents pursuant to the Northern District of California’s Patent Local Rule 2-2 Interim
Model Protective Order.

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